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MAST AND SAIL

IN EUROPE AND ASIA

BY H. WARINGTON SMYTH

(ROYAL THAMES YACHT CLUB)

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TO MY WIFE

FOR

SWEET REMEMBRANCE'

SAKE

INTRODUCTION

THE present chapters are the outcome of some years of varied sea travel. They attempt to record the peculiarities of the principal types of sailing-craft in Europe and Asia which I have observed, or of which I have had experience, and in many cases have handled for myself; and to consider, to some extent, the causes which have been at work in the development of boats and the results attained under the conditions with which they have had to contend. This book can only pretend to be a contribution to the literature of the subject,—indeed it would be wellnigh impossible for any one man personally to know the coastlines of the earth in sufficient detail, and to study or handle all the numerous types of sailing-boats, developed with endless variety and ingenuity in every locality, with sufficient intimacy to write on the whole subject. I can only hope here to indicate to those whose tastes are similar to my own the infinite interest of a study which 'Mast and Sail' can afford him.

Fate has led me to a city far inland in a continent of landsmen, and has cut short such cruises as I had hoped to make in order to render these observations more complete.

The question of arrangement of subject has been one of some difficulty. The grouping of sailing-boats under types is likely to lead to erroneous conclusions, since the choice of types is apt to be based on similarities which may be the result of accident or of mere imagination.

The arrangement of craft, on the other hand, in alphabetical order is bound to be unsatisfactory, both on account of the difficulties occasioned by the true signification of native names, and also because it brings the most heterogeneous types together regardless of any geographical or historical connection.

A geographical division seems, therefore, the most reasonable. The system of grouping under the names of the various seas, irrespective of country and nationality, while it has some obvious advantages over arrangement by political or other land divisions pure and simple, leaves still the difficulty of subdivision. A somewhat arbitrary combination of these two arrangements has, therefore, been adopted in the following pages. Europe has been placed before Asia on account of its more immediate interest to the majority of readers. Yet Asia may well claim precedence for the great antiquity of its types of sea-craft, which in most cases can claim a more remote origin than the oldest of those surviving in the Mediterranean or Norse seas.

My special thanks are due to my old comrade of Cambridge days and of many a good sea-cruise, J. F. Rowlatt, for much assistance in completing

these notes; to my old friend Captain Drechsel, late of the Danish Navy, for much information contained in Chapter II.; to Mr. Colin Archer, of Larvik, for details of Norwegian types; and to Mr. Robert Duthie of the Scottish Fishery Board, to whose extensive knowledge and enthusiastic co-operation I am specially indebted for much valuable information in regard to the Scottish Fisheries. To Mr. Alfred Cholmley and to my brother I am indebted for interesting points in regard to the methods of Red Sea dhow crews; and to Mr. C. Forster Cooper, of my old College, for many particulars regarding the Maldive boats. My acknowledgments are also due to the authors of the valuable and delightful works of which a list is given at the end of the book.

H. WARINGTON SMYTH.

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TO MY WIFE

FOR

SWEET REMEMBRANCE'

SAKE

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MAST AND SAIL

CHAPTER I

THE LIFE OF THE SAIL

THE progress of steamship building, the increase in size and speed of ships, and in the use of iron and steel in their construction, startling and revolutionary as they appear to be, have yet very little altered the conditions of life for many hundreds of thousands of human beings who follow the sea. Notwithstanding the introduction of iron steamers in the trawling and drift-net fisheries of our own coasts, and the increasing use of steam in handling nets, the sail still holds its own bravely. The sailing fishing-boats of the world, and the coastwise traders, those cradles of maritime strength, still perform their part, almost untouched by the roar and rush of this age of machinery, still following the laws which have brought about their various developments. To them the romance of the sea is not past; rather it is infinitely increased by the presence of that new monster the iron steamship, roaming the seas and leaving sudden death so often in its wake. The old romance which made great and simple the hearts of sailor men, and marked them with its own impress, is still alive, still potent, pure, apart.

What is it in the sea life which is so powerful in its influence? what is it which one meets there with such certainty, and which is not in crowded places nor in men's applause, not printed in newspapers nor telegraphed by Reuter? It is in the laugh of the little child, in that look of the woman you love. It is on the bosom of the great river, in the breast of the wide moorland. It whispers in the wind of the veldt, it hums in the music of the tropical night. To some, it is borne on the booming night-notes of the deep forest, to others it speaks on the silent snow-peaks. But above all it is there to the man who holds the night-watch alone at sea. It is the sense of things done, of things endured, of meanings not understood; the secret of the Deep Silence, which is of eternity, which the heart cannot speak.

It was the same to Ulysses and Columbus as it is to-day to the barge's skipper or the young fourth officer of a Liverpool tramp. The Northland fisherman, the Arab, or the young Malay have felt its extraordinary depth and intensity, and many a black-coated city man is the happier and sounder for having heard its silent eloquence. He has felt the tie that binds all seamen of different nationalities and climes and ages; he has looked on the same mysteries, has heard the same music of the deeps; and he has found the rest to his soul which the great silence of Nature brings to the seeker at all times, whatever his race or creed. I know that some of my old shipmates have met it, whether their skins were white or brown.

Yet even in the steamship this spirit still prevails. Indeed, no more remarkable survival into this age of

steam of the old sea spirit, unstained, untouched by modern undisciplined ideas, can be quoted than the British Navy. Notwithstanding all the influence of modern scientific development, with which, in all its branches, the Navy is more familiar than any other profession, it yet preserves intact the old naval traditions, and it is this fact which makes the navy as it exists the most priceless jewel of the British Empire. Beware, all landsmen who would meddle with that spirit of the sea! It cannot be intelligible to those who are not bred of salt water, for it is a product of the great ocean, and like it, unfathomable. It has created there a greatness scarcely realised, an efficiency and discipline which in the nature of things are impossible on shore, but at sea are put daily, hourly, to the test. For in the navy, direct, prompt, cheerful, and fearless action are the first conditions of existence; simplicity of life, hardship and duty—a word too likely to be forgotten in high states of civilisation—are breathed with the very air; incompetence is never excused, and means certain ruin.

And that spirit goes shipmate with steam elsewhere too upon the seas, to the credit of steam and modern shipbuilding. The landsman, travelling by an ocean liner, may get a glimpse of it if he pauses to consider the steadfast figure on the bridge, or listens to the meaning of the patient screws beating out the knots astern. A thrill of pride in his own race may go through him when he sees the wallowing tramp slouch by, burrowing like a mole in the huge ocean banks and kicking the icy clouds of spray aloft to fatten her frozen decks. His heart may feel a genuine glow to

hear the stories of the deeds of the twenty-knot monster upon whose deck he stands.

But, if he be of understanding mind, something yet bigger will glow within him as he casts his eye towards the little coaster that rises now and then into view under reefed canvas, or the tiny fishing-lugger, not as long as the smoking-saloon in which he sits, that he meets a hundred miles from land riding like a young gull over the ridges of the seas.

'You see often enough a fisherman's humble boat far away from all shores, with an ugly black sky above and an angry sea beneath; you watch the grisly old man at the helm carrying his craft with strange skill through the turmoil of waters, and the boy, supple-limbed, yet weather-worn already, and with steady eyes that look through the blast; you see him understanding commandments from the jerk of his father's white eyebrow, now belaying and now letting go, now scrunching himself down into mere ballast, or bailing out death with a pipkin. Familiar enough is the sight, and yet when I see it I always stare anew, and with a kind of Titanic exultation, because that a poor boat with the brain of a man, and the hands of a boy on board, can match herself so bravely against black heaven and ocean.'[1]

But the ordinary man is probably hurried on to some great city, forgetful of that other world of men of which he just touched the fringe, not knowing that he is passing by a quite other side of life, replete with human interest, characterised by unrewarded courage and unsung heroism, and rich in all the fruits which

[1] Kinglake's *Eothen*.

are ripened in men in constant contact with the greatest forces of Nature. For it is above all in the men who handle sails that the self-reliance which is bred by tempest, darkness, and the shadow of the Angel of Death reaches its highest point. The seriousness, from this point of view, of the loss of masts and yards to the Navy has been fully recognised, and it has only been reluctantly acceded to on account of the pressing importance of other more essential forms of training. But among the coasters and fishermen of the world the mast and sail more than hold their own, and here the student of the sea will find himself in a by-path of the modern world, among the old thoughts, the old traditions, the old methods, and the old virtues of the great seas.

And when this civilisation shall have condemned itself and passed the way of others, the lugsail and the lateen will still be navigating the deep, conned by other races, but the same grim, great-hearted sailor men.

Combined with the strong conservatism which characterises it, there is along every coastline a singular ability to modify custom to meet new requirements, and a power of adaptation to different conditions which is perhaps unsurpassed in any pursuit of man. The study of the types of craft and rig which have been developed by different races under varying conditions becomes, from this point of view, one of absorbing interest and value.

There is nothing sordid, cramped, or unhealthy for body or mind in what a man may learn from sailing boats. It is a subject, beyond most, shrouded about by the immensities which are the 'vesture of the

Eternal.' Leading into the solitudes of Nature, and into the presence of the Immeasurable, it must needs enlarge men's natures, in a degree impossible in much of modern Western life.

The man who handles sails must think for himself and act for himself. When the fisherman starts for his fishing-grounds, or the pilot turns homeward again, there is no coach-road along which he can drive a straight course. From the moment he begins to get his anchor, he must be tide-dodging and sail-trimming; his way he finds for himself across shoals and currents, by day with the aid of keen eyesight and good memory, and by night by the addition of an instinct for direction and a power for estimating relative speeds of wind, tide, and boat, which to the uninitiated are meaningless, and are only attained by long practice and possession of the sea-instinct.

Apart from the mere physical triumph which man has in handling tackle, there is for the sailing men the additional glory which is known to the explorer, the soldier, and the huntsman, which has made the wild nature life of the great continents exercise the enduring attraction which it does to the men who have lived the life—the glory, namely, of the pathfinder, the man who must seek the road, dare the experiment, keep a clear head, and understand a map more clearly than a picture—which things are hidden for ever from the man 'who is carried.'

But more than these others, while all his faculties are bent on picking up indications that help to whereabouts, which at sea are ever less easy of discernment than in any mountain country, he must be able to

detach one eye for the direction of the ever-shifting wind, one hand for the constantly needed handling of his ropes, and an added faculty or two for cheating or utilising the tide or the breaking seas, as the case may be.

And more than those others, too, he must be prepared to blow up his own fire, get his own meal, and make every one of a hundred possible necessary repairs, amid darkness, tossing, and cold flying spray, if called upon.

If any one would know to the full the meaning of these things, let him ship on board a Bawley boat from Leigh or Whitstable on an autumn morning, and with no chart, but with a lead-line and with the astounding memory of the skipper of the little boat, find his way down to the Gunfleet and back. In all that intricate network of sands and channels, given the hour of the tide, the depth and the character of the bottom as disclosed by the lead, a Bawley man will tell you exactly where you are, although, as in the case of an old friend of my own, he can neither read nor write, and has never seen a chart.

In such scenes you may know the glory of the pathfinder as truly as on the veldt, in the deep jungle, or in the wide north-west. In this desolation of the waters men find their brotherhood, as in all scenes where they grip hand to hand with great Nature.

The sailing-boat is one of the simplest and most universal of human machines—cleanliest, most delicate, most gentle, and amenable. It is a simple reduction to practical uses of the highest and most beautiful laws of physics, towards which all nations have contributed,

according to their abilities and the local conditions to which they are subject. The man, be he Chinaman or Malay, in the Mediterranean or Atlantic, who beats to windward through intricate channels against a lee-going tide, is staking his hand, eye, and brain, his whole concentrated intelligence, against Nature herself, turning against her her own laws. There is no 'as you were' at sea. A fathom too far, a little indecision, a mistake of judgment, or ignorance of a single detail, whether of the conditions of things beneath the water, or in the sky to windward, or in the rigging overhead, or whether of the eccentricities and behaviour under existing conditions of the boat, may result in disaster, with any result from a little loss of time and temper, to total loss of ship and life. The punishment for inefficiency and ignorance, even though they be excusable or inevitable, never fails in Nature. But at sea it comes remorseless, fierce, and sudden; for the sea is a hard taskmistress, and teaches her lessons with no sparing hand.

The wide differentiation of type which is observable in boat-building has been the result of the efforts of different nationalities, and differently constituted minds, to meet the peculiar requirements of their own nautical surroundings.

A journey of a hundred miles along any fairly populated coast will disclose some variation in rig, or in build, or in both, prompted by some curious tradition, or necessitated by some meteorological or physical condition prevailing in the locality, and affected almost invariably by other considerations of an historical or practical kind.

Thus the directions and force of the prevailing winds, the character of the shelter available, the depth of water, the character of the 'sea' to be generally encountered, and of the waters navigated, the length of the voyages, the materials to be had for building, the character of cargoes or methods of fishing, are all factors in the development of characteristic types. Though development and individual departure from strict type are always going forward, there generally remain certain well-marked peculiarities common to the type, sufficiently distinctive to enable the student to trace their descent back for at least several generations, and in some cases to a comparatively ancient date.

It is curious how many logs and cruises, written by otherwise observant persons, are barren of information on this subject. The traveller is at pains to describe at length the arts and crafts and histories of the peoples whom he meets with, but boat-building and native seamanship he passes by as of no importance and little interest.

The sailor relates in detail what he eats and what he does in his own ship; how he is wet or dry, or sleeps or wakes, sets sail or reefs; but so far generally as his narrative goes, his own vessel appears to be the only one upon the face of the waters, unless he happens to meet a pilot or a lightship or a yacht.

Yet the history of Mohammedanism, with its extraordinary influence on Asia and its tremendous consequences to Europe, is unintelligible without the dhow and the lateen-yard; while the Malay race as it is to-day without the prau could not have been.

These old-time vessels, the same to-day as they

have been for centuries, have altered the history of the world. It has yet to be seen whether the age of steam will leave such permanent results upon the distribution of race and thought as have these simple sailing-boats, which have carried the crescent and the sword, and navigated and deeply influenced all the quarters of the Old World.

Not less have the long clinker-built boats of the Northmen, and the strong, bluff-lined Dutch craft, been part and parcel of the history of modern Europe. Each in turn they have conferred that 'command of the sea' which was essential to enable the races who manned them to make and leave their mark on history. They each have helped to build up that empire of the seas which this country has inherited, and must retain, as long as she is to wield influence with mankind. They will probably outlive our fleets and our empire, as they have outlived the history which they made.

When our tall steamships are scrap-iron, and our cities, our literature, and our race are unknown except to a few learned savants, the Arab baggara and the Indian pathamar will be still thrusting their long snouts through the blue of the Indian Ocean, as they have done for two thousand years already.

Surely, then, the reeling Red Sea baggara, foaming before a fair wind, becomes a thing of living interest, to which any man may well doff his hat in reverence for the things it has accomplished, and the history it has yet to see.

The individuality of the sailing-vessel is one of its most remarkable attributes. It is seen to a lesser extent in the steamship, the locomotive, or auto-

mobile, and in the stationary engine; but in none is it so developed as in the sailing-boat, and of all the works of man none has served him so long, or ever wins so pre-eminently the confidence and love of its master and creator.

See her upon the stocks, in a Malay builder's shed, in Canton or on the Clyde—how helpless in her own creation, a mere mass of material, a thing to all seeming inert and dead. Yet from the moment when she rides at anchor in the tide she begins, even in the way in which she snubs her chain, to show individual traits of character which are peculiar to herself, and which go on developing to the last day of her life. Storm and sunshine, wind and calm, breaking sea and rolling swell, go to make her, be she junk or barge, schuyt or lugger, and to build up that confidence and intimate knowledge of one another which lies between a skipper and his vessel, and upon which may at any moment depend their very existence. And so the boat goes on 'gaining continually in grace, strength, audacity, and beauty, until at last it has reached such a pitch of all these that there is not, except the very loveliest creatures of the living world, anything in nature so absolutely notable, bewitching, and according to its means and measure heart-occupying, as a well-handled ship on a stormy day.'[1]

The keynote of sea-life is the suddenness of its emergencies, the indescribable swiftness of its catastrophes, and the intensity of its calls upon the presence of mind and swift action of those who follow it. It is with a view to emergency, in the understanding of

[1] Ruskin in Turner's *Harbours of England*.

the certainty of Nature's passions, that every capable sea-going boat is designed, built, rigged, and sailed by every race. It is not the long summer evening or the steady trade-wind that the sailing-boat is built for. At sea, more than in any life of man, more even than in time of warfare, it is the worst that must be anticipated and prepared for. It is this certain knowledge of impending struggle which makes the sailor-man the alertest of mankind and the most patient; and it is the fatalism bred of the constant sense of danger which gives him the cheerfulness which shines most brilliantly in emergency, and must ever be a source of wonder and respect to those who are privileged to know it. Not only by the moment of danger, but also by those long hours of enduring struggle and watchfulness which are nowhere longer drawn out than they are at sea, man and boat are moulded.

It is for such that the sailing-boat is built; it is in darkness, when plunging into the unknown sea-valleys, heeling to the shrieking winds, that the true and living nature of a boat is manifested. It is then that man gains a new sense, exulting in the staunch bravery, the true spirit of duty, the unerring pluck with which the small fabric of man's making climbs the threatening crests, and steps up to the heavy-fisted squalls.

Truth, beauty, power, and obedience—they are all there, all necessary. That worn little boat with her coat of tar and her patched brown sails follows laws as true and as majestic in every line of softly-turning plank or bowing spar, as those by which the great

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cathedral stands noble evidence of man's best aspiration, or the solid pier bars back the waters in proud witness of his highest achievement.

It is probably true that the degree of civilisation of any race is remarkably reflected in its boat architecture. The variety of its adaptations to the peculiar requirements of its waters is a measure of its appreciation of the value of the cheapest and most certain method of communication known to man, and it is evidence of its ability to use materials at hand and fit them to its needs. The highest degree of civilisation in maritime races has always been marked by activity in boat-building, and by variety of design and rig. In no case has this been more notable than in the history of China and of Holland, and in the Adriatic in the fifteenth century, in Europe during the last two centuries, and in the United States since 1780.

The Negro, the American Indian, and the Slav, on the other hand, have never designed a sea-going boat or cut a sail. It has not been for want of waterways or of opportunity. It has been simply owing to a lower class of intelligence, and to that want of originality and enterprise which is the despair of the Negro race, has been the death of the American Indian, and will probably prevent the Slav from ever attaining to that influence in the world's history which at one time seemed likely to be his.

The navigation of the Northern and Eastern coasts of Africa has been in the hands of the Arabs from time immemorial. The dhow and the lateen-sail which are seen south as far as Zanzibar, are Asiatic, and not African. The defects which render it impossible that

the Negro will ever attain to any degree of true civilisation, and which doom him to remain for ever on a lower scale than the most primitive race of Asia, have also prevented his ever raising a noble building, thinking an original thought, producing any work of art, or building or sailing a boat of his own. The measure of his intelligence is the fact that he has never tamed the elephant, the most docile of living beasts, which no race of Asia, be it the lowest, has not tamed to its uses long ago.

The Indian of America, although a fine canoe-man, second to none upon swift rivers, has died without ever having hoisted a sail or got beyond the canoe paddle.

The Slav has less the makings of a sailor than either of the others, and though he may build land empires, the island races will always defy him to the end of time.

And for the reverse of the picture, take the finest sailing-coasters, the most powerful fishing-craft, and you will find that the inhabitants of the coastline they navigate are pre-eminent in courage or endurance, or in some branch of thought, or art, or manufacture, by which they will leave their mark among the races of the earth.

It is the sum of these things which goes to make harbours in many ways the most interesting places of the earth. Here the land and sea, the shore-life and the shipping-life, meet and mingle. Here may be read the character, the history, and the potentialities of the race; here may be gauged the extent of their enterprise and prosperity, in a way which can be done nowhere so well, not even in the capitals themselves.

Who should discourse of the Harbours of the World will have a subject worthy of his pen, not less than of his brush. For he will deal with all history and the lives of the nations; and he may paint scenes second to none for beauty of form and colour. There is no place so full of ever-changing life and physical activity as a great harbour, or more replete with interest and suggestion to the mind. The coming and going of ships, linking it with ends of the earth; the endless incident and the changes and chances of wind, tide, and sky, all go to make harbour life unique, and to explain the fascination which it contains for every Englishman and boy.

In the lives of most who have felt that fascination, deeper than all else beside, has generally sunk the recollection of some small fishing or coasting craft come in for rest and shelter from out the stormy horizon. The big-booted crew seemed to take on the shapes of old viking heroes, and the dripping little vessel herself, with her clean lines and brave high bow, is glorified in the memory by the mysterious air of power and daring which seemed to cling to her as she staggered in under reefed sails out of the wildness beyond.

Ruskin, in a notable passage which is too seldom read, has wellnigh touched the soul of the Boat Spirit:—

'One object there is still which I never pass without the renewed wonder of childhood, and that is the bow of a boat. Not of a racing-wherry, a revenue cutter, or clipper yacht; but the blunt head of a common, bluff, undecked sea-boat, lying aside in its furrow of

beach sand. The sum of Navigation is in that. You may magnify it or decorate as you will: you do not add to the wonder of it. Lengthen it into hatchet-like edge of iron, strengthen it with complex tracery of ribs of oak, carve it and gild it till a column of light moves beneath it on the sea, you have made no more of it than it was at first. That rude simplicity of bent plank, that can breast its way through the death that is in the deep sea, has in it the soul of shipping. Beyond this we may have more work, more men, more money; we cannot have more miracle.

'For there is an infinite strangeness in the perfection of the thing as work of human hands. I know nothing else which man does, which is perfect, but that. All his other doings have some sign of weakness, affectation, or ignorance in them. They are over-finished or under-finished; they do not quite answer their end, or they show a mean vanity in answering it too well. But the boat's bow is naïvely perfect; complete without an effort. The man who made it knew not he was making anything beautiful, as he bent its planks into those mysterious, ever-changing curves. It grows under his hand into the image of a sea-shell; the seal, as it were, of the flowing of the great tides and streams of ocean, stamped on its delicate rounding. He leaves it, when all is done, without a boast. It is a simple work, but it will keep out water. And every plank thenceforth is a fate, and has men's lives wreathed in the knots of it, as the cloth-yard shaft had their deaths in its plumes.

'Then also, it is wonderful on account of the greatness of the thing accomplished. No other work of

human hands ever gained so much. Steam-engines and telegraphs indeed help us to fetch and carry and talk; they lift weights for us, and bring messages with less trouble than would have been needed otherwise; this saving of trouble, however, does not constitute a new faculty, it only enhances the powers we already possess. But in that bow of the boat is the gift of another world. Without it, what prison wall would be so strong as that "white and wailing fringe" of sea? What maimed creatures were we all, chained to our rocks, Andromeda like, or wandering by the endless shores, wasting our incommunicable strength, and pining in hopeless watch of inconquerable waves! The nails that fasten together the planks of the boat's bow are the rivets of the fellowship of the world. Their iron does more than lead lightning out of heaven, it leads love round the earth.

'Then also it is wonderful on account of the greatness of the enemy that it does battle with. To lift dead weight, to overcome length of languid space, to multiply or systemise a given force, this we may see done by the bar, or beam, or wheel without wonder. But to war with that living fury of waters, to bear its breast moment after moment against the unweaned enmity of ocean, the subtle, fitful, implacable smiting of the black waves, provoking each other on, endlessly, all the infinite march of the Atlantic rolling on behind them to their help, and still to strike them back into a wreath of smoke and futile foam, and win its way against them, and keep its charge of life from them; does any other soulless thing do as much as this?'[1]

[1] Turner's *Harbours of England.*

The pleasure-boat and the yacht form no part of the subject of these pages. Modern yachting has developed along special lines into a science in which quite new factors than those usually prevailing in shipbuilding have been gradually introduced. As was natural, a considerable literature has grown up with it, and the yachtsman will find no lack of capable books dealing with those sea-queens of steel, lead, and aluminium in which the modern yacht has culminated.

Nor in these pages is it intended to deal with modern square-rigged sailing, for this subject is an engrossing one by itself and needs to be treated by a square-rig sailor. Modern square-rigging may be said to have come into existence with the development of the topmast and topgallant mast, which was a result of the adventurous and extensive voyages in the tiny vessels of the time by Columbus, Vasco da Gama, Cabot, and others in the early sixteenth century, which made an end of the monopoly of the seas by the Venetian galleys. It developed constantly through the period of the Dutch naval supremacy, through the wars which won for England the mastery of the seas against France and Spain, and through the period of the American competition for the carrying-trade which immediately preceded the introduction of steam and of iron ship-building. In fact, its development has scarcely yet ceased, inasmuch as double topsails and topgallant sails, and steel yards and masts, are an outcome of the later steel age, and are a production essentially of the last quarter of the nineteenth century. From the caravel of three hundred tons to the four-masted steel sailing-ship of six thousand tons measure-

ment is a long step, and its history would be an instructive and thrilling record of the enduring patience, the uncomplaining fearlessness, and the resourceful ingenuity in the face of difficulty, privation, and danger which have always characterised, above all men, the deep-water sailor.

We tread a humble road and sail with the lowly worker. We turn where the modest coaster and the patient fisher-craft ply in the forgotten corners of the seas; whose homes are behind the rough stone piers and the lonely, wind-swept banks. Their hard-won wake we follow, not in the ocean highways, but by rockbound cape and snarling, far-stretched shoal; not in the bright noonday, but in the bleak watches of the long night; not in the summer breeze, but in the fury of hammering gale and rearing sea. With them we hear the 'longshore seagulls' wail and the sad curlews' whistle. In their worn shrouds the cold land-wind harps to us; the thunder of the waiting breakers is about us. Their music, the singing of the coastwise tides, is ours too. There is death in that symphony, but it holds the great secrets in its keeping.

καλόν γὰρ τό ἆθλον, καὶ ἡ ἔλπις μεγάλη.

CLEARING THE LAND

CHAPTER II

THE BALTIC, DENMARK, AND SWEDEN

THE Baltic may well claim precedence among the seas as the boat-sailers' paradise. Not even the classical Mediterranean can surpass it in interest or beauty. While in the Mediterranean the sailor's mind goes groping back to reconstruct, if possible, the craft of Egypt, Phœnicia, or Rome, in the Baltic his eye may gaze upon the almost identical longships, or 'keeles, which carried the brave Norse boatmen of old to build up nations in the West.

As the Mediterranean is the nursery of the high-peaked lateen, the parent of the longyard lugsails of the South, so the Baltic remains the sea of the storm-enduring squaresail, the parent of the short-headed lugsail of our Northern isles.

The one is the home of the silent, clean-lined, carvel build; the other of the strong, simple clench or clinker-build, first understood and practised by the wonderful old Norse boat-builders, and by them handed down, through the fishing-boats of the Northern nations, to our own time.

But while the interest of its strongly-built boats and the beauty of its wooded, rocky coastline exercise a peculiar fascination upon the voyager, perhaps the chief charm of the Baltic is in the kindly ways and

honest hearts of the hardy people living upon its shores and navigating its waters.

No nations of the earth can excel in charm and hospitality the Norwegians, Swedes, and Danes. What a voice these Scandinavian cousins might have in the world's doings if they would but settle their differences and agree to pull together! When navigating their seas and enjoying their hospitality, the Englishman can never cease to wonder why the present enmity between them does not give way to the more generous

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rivalry which is produced by unity of policy. It is not too much to say that the British race, under similar circumstances, would have contrived some scheme of federation which would have enabled the three Norse nations to have presented a united front to the world, and been masters of the Baltic.

It is upon the water, as ever, that political or racial differences are forgotten, and the cruiser may be sure of a hearty welcome, and a friendly hand if he needs it, whatever nationality he may light upon.

It was once when beating up the narrow channel,

scarcely twice our length across, into the little port of Landskrona on the Swedish coast, that our forty-tonner went a fathom too far, and as she came in stays, she took the mud and remained fast. A pilot came off, although it was blowing fresh, and eventually, after other efforts had failed, he took off a heavy anchor for us, by means of which we soon hove the ship off. He watched us get it in, and get way enough on our ship to come about again clear of the shoal, and thence go tacking up the tortuous gut, with evident satisfaction.

As soon as we were at anchor, and while we were still stowing sails, he came aboard.

'Good day, Pilot,' I said; 'what do I owe you for that little job?'

'Good day, sar,' he replied in excellent English, taking off his cap all round; 'I just come aboard to see you and look at the yacht; she was built over here.' We offered him supper, or a glass of grog, or a cigar, but he refused all, saying that he 'd 'just like a bit of a yarn.' So a yarn we had, a good long one, about the ships he had sailed in, the ports he had visited all round the world, and about the ship, and what she cost to build, her rig, her speed, her virtues and her shortcomings, and an hour after he raised his cap and began to haul his boat alongside. 'Well, Pilot,' said I, 'what do I owe you for helping us get that anchor away?' 'Oh, that 's nothing,' he declared, and he insisted that he only wanted a yarn 'and to look at the yacht again.' In vain we pressed money, food, and drink, and everything else we had on board upon him. As he pulled away in the darkness of the

windy night, he was still protesting that all he had wanted was a yarn. And this is typical of the seafaring men of the Baltic Sea who, second to none, have drunk the deep sea spirit, and from some of whom, more than any of the sons of men, it has been my lot to receive kindness and friendship more disinterested, more unique, than I think can ever be met except among the men who have tasted in life the meaning of the great silence, and know it well.

IN THE GREAT BELT

Not less than the men, the craft of the Baltic form a never-ending source of interest, and have very well-marked characteristics. With scarcely an exception the sharp stern is used in all the fishing craft, whether Finnish, Swedish, Danish, or Norwegian. Sharp floors, great beam, and considerable rake of stem and stern post, with wide flare forward, are the rule. The boats are nearly always clinker-built in wide strakes of great

thickness, and when undecked they usually have high sheer. The materials used are oak or fir, and wooden pegging is much resorted to.

As regards rigging, pole-masts of very good height are usual. Where the old single squaresail has been discarded, the square-headed spritsail has generally been substituted (except in the larger vessels where the gaff mainsail is preferred), and the staysail added before the mast to keep the balance of sail.

In the small traders, in which the gaff and boom

BALTIC KETCH

mainsail take the place of the spritsail, the dandy is, especially on the south coasts, the favourite rig. The mizen is usually lofty and stepped well inboard, and its proportion often gives to the vessel the appearance of a cross between a dandy and a schooner, like the early nineteenth-century schooners on our own coasts. Besides the fore staysail, there are usually in these vessels two or three jibs rigged out on a long jibboom, and square yards and sails hold their own on the fore-mast for favourable winds, and often even when sailing

by the wind. As in the old Dutch galliots, which these vessels often much resemble, leeboards are frequently seen, especially in the shallow waters of the southern coast. A peculiarly antique stern (like that of the King's cutters two centuries ago), with old-fashioned wooden davits carrying the dinghy over it, an overhanging bow with much flare, and prominent deck-houses painted in some light colour, give to these craft a character of their own, and help to make them comfortable sea-boats, notwithstanding the low free-board of the waist when fully laden.

The fishing craft of the Gulf of Bothnia and Finland form exceptions to the usual run of craft in the Baltic in the matter of beam, and are proportioned much more on the lines of the Viking vessels, which they also follow closely in the matter of rig. Like the long 'Keeles' of the fifth century, they are nearly always open, and when, as in some of the larger and deeper boats, a shelter is provided, it is placed in the stern of the boat, instead of forward as is usual in fishing craft on our coasts. One reason is, no doubt, that the great height of the bow renders decking unnecessary and inconvenient; added to which the North men wisely like to keep weight out of the hollow-lined bows, and so assist their boats in being lively in the short seas prevailing in bad weather in the Baltic, to which this class of boat must always be kept head on.

The curved and elevated stem and stern posts of these boats remind one instinctively of the Viking ships, and they show how little in some respects the design and construction of those old builders has needed improvement. Like their forerunners, the boats are

clinker-built of oak or fir. They are used for cod-fishing, and pull from six to twelve oars, with long blades and heavy looms.[1] In some cases yoke lines are fitted in addition to the tiller. It will be noted that an almost similar type of boat, but of finer lines and finish, and slightly larger size, is used by the Norwegian cod-fisherman of the Trondhjem district.

The spritsail boats in Finland follow very generally the lines of the small open boats in use among the Norwegians and elsewhere, and do not call for special notice here.

Denmark

If, as the Danes affirm, the Swedes may be called the Frenchmen of the North, they themselves may at least be reckoned the English of the Baltic.

The peaceful inland scenery of their islands, their personal appearance, their enterprise, and their deep reliance upon the sea, are all essentially British.

As might be expected of an island race, using the sea so widely, they are splendid boat builders and boat sailers, and have developed a great variety of interesting types adapted to the peculiar conditions of the shores.

The boat-harbours of the Danish Isles consist generally of a couple of timber jetties filled in with big stones, built out on some shallows, or in a sheltered spot at the mouth of a fjord, and enclosing space enough to just hold the boats owned by the inhabitants

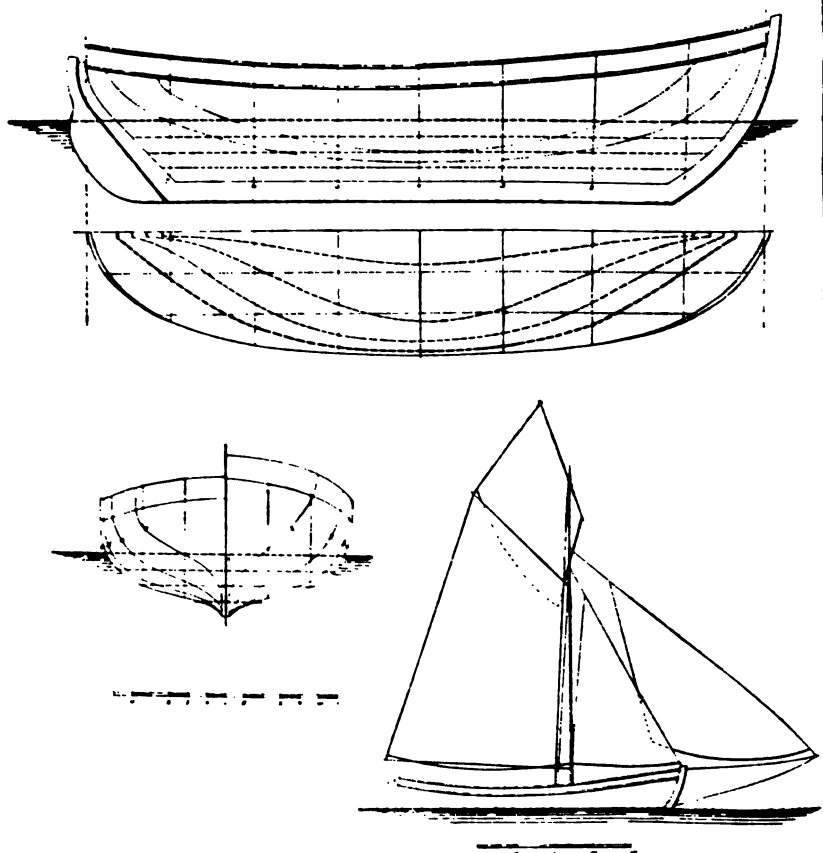
[1] The purely open boats of this type in the Gulf of Bothnia are about 29 ft. long, 5 ft. beam, and 2 ft. in depth, with a mast about 24 ft. length. The foot of the squaresail is wide, and is extended by a long boom. The half-decked boats are 27 ft. by 7 ft. beam, by over 3 ft. in depth, have a shorter mast, and a very square yard nearly the same length as the mast.

of the scattered little wooden houses near by. Their entrance is often less than thirty feet across, and there is generally not more than four or five feet of water in the haven. Getting under way or bringing up in these confined and crowded little harbours in anything of a breeze requires a quick eye and a handy boat. Even in the most exposed portions of the coasts there is generally one such harbour within reach, if one's craft does not draw too much. The abundance of small harbours, the untold miles of protected waters to be navigated, the charming scenery of widening, narrowing fjord, and the shallow soundings generally obtainable, all combine to make this portion of the Baltic a glorious cruising-ground for the adventurous small boatman. But he should follow the example set by the Danish fishermen, and never exceed a five-foot draught if he wishes to explore the most charming of the Danish waters.

Mr. E. F. Knight, in his *Cruise of the Falcon*, has given a delightful description of the beautiful coast-line and its fishing population, and of the treacherous weather to which the lovely waters of the Baltic are subject.

For the open water work, the Danish boat-builders have succeeded in developing very powerful boats, considering the draught and size to which they are generally limited by the restricted size of their harbours; and in the wild autumn months they need to have stout craft under them even more than in the beautiful but treacherous summer days; for no sea changes its hue so quickly or so often as the wicked, wooing, smiling Baltic. And as the winter comes and the warning

flakes of bottom ice commence to shoot upwards to the surface, boats and men together have many a long hard fight to get home from the clutches of the hungry northern storm-fiend.



PLAICE-FISHING.—HORNBAEK BOAT, 36 FT. BY 13 FT. 8 IN. BY 5 FT.

For the even more exposed and boisterous waters of the Kattegat, and the western coast of the bleak promontory of Jutland, larger tonnage and greater draught is the rule, while for the eel and other shallow-

water fisheries flat bottom centre-board open boats are coming in.

The fishing-boats of Hornbaek, at the northern end of the Island of Siaelland, and of Skovshoved, on the east coast of Siaelland, in the Sound and north of Copenhagen, will be probably best known to yachtsmen

OFF ISE FJORD

and seamen, the majority of whom, in vessels of any draught, pass through the Sound in going and coming.

The Hornbaek boats are very characteristic in build, and follow the usual rule of being stem and stern alike and clinker-built. They have considerable sheer, and remarkable flare on the bows and quarters. The stern-post is very raked, and the top is rounded up and cut off, in a manner peculiarly Norse, below the top of the

rail, the tiller passing through an open cut in the bulwark, and beneath the rail, which is carried right round. They are cutter rigged, having gaff and boom mainsail and yard topsail set on the pole-mast.

They are decked in, and are fast and beautiful sea-boats. They are used for plaice and other fishing in the Kattegat.[1]

Almost identical with these boats, in build as in rig, are the sole and herring boats of Lynaes and Hundested,

KATTEGAT PLAICE-FISHING BOAT

at the mouth of the beautiful Ise Fjord. They have less sheer, less draught, a trifle more beam in proportion to their length, and a lower rail than the Hornbaek boats, but like them they have to face plenty of bad weather in their fishing-grounds around Anholt and in

[1] Approximate dimensions: Length, 36 ft.; beam, 13 ft. 8 in.; draught, 5 ft. In most cases the dimensions of the Danish boats are taken from Captain C. F. Drechsel's admirable work on the Danish fisheries.

the southern part of the Kattegat. Owing to their shallowness and enormous beam, and their peculiar dish-like section, these boats, when under way, really appear to be all deck, and to have scarcely any side at all. They are wonderfully buoyant dry craft, and their

FISHING SLOOP, ISE FJORD

motion in a sea-way is quite peculiar and strange to any one accustomed to deeper, narrower builds.[1]

A number of these boats weathering a nor'-wester form a sight which no one who has been privileged to see it can forget.

Another craft, almost similar in every particular to the types just mentioned, except that she is larger and

[1] Length, 32 ft. 6 in.; beam, 13 ft. 8 in.; draught, 4 ft. 6 in.

is dandy-rigged, may be here referred to as hailing from Frederikshavn, at the north-eastern extremity of the storm-swept Jutland. This boat is also used in the plaice fishery in the Kattegat, and is, as is very necessary, a powerful sea-keeping type, of very strong construction. The mizen, behind which is the steering-well, is often a flat-headed spritsail, and the mainmast is fitted with a topmast. Such a boat would form an ideal rough-weather cruiser.[1]

Plaice, sole, and turbot form an important fishery, and besides the trawl, and shore and deep-water bottom seine nets, spiller lines and tramel nets are used all round the coasts. These fish mostly frequent Anholt and the Aalborg banks, Ise Fjord and the head of the Sound, and some spots on the west coast.

The Skovshoved herring-boats, in which may be included all boats engaged in this important fishery, sailing from the small harbours of the Sound, as far south as Faxe Bight at the south-eastern end of Siaelland, are much smaller in size and are only half-decked. The curve of the stem-piece is very marked and gives a very rounded forefoot. The stern-post is as usual very raked, and above the waterline makes that curious elbow, or forward curve, which is characteristic of the majority of the Danish boats, and is more developed in these boats than in any others. They carry their beam well aft, especially above the waterline, where there is great flare. The deck plan is peculiar, the little cuddy which does for a cabin, and has just room for two men to lie down for an occasional

[1] Approximate dimensions: Length, 42 ft.; beam, 15 ft.; draught, 6 ft. 6 in.; tonnage, about 24.

spell, being placed aft at the quarters just before the tiny well occupied by the steersman. The boat is open amidships as far as the mast-thwart, with wide waterways along the sides.

In a boat sketched at Vedbaek these waterways

VEDBAEK BOAT

gradually narrowed forward until they vanished at each bow where the boat was entirely open—eloquent

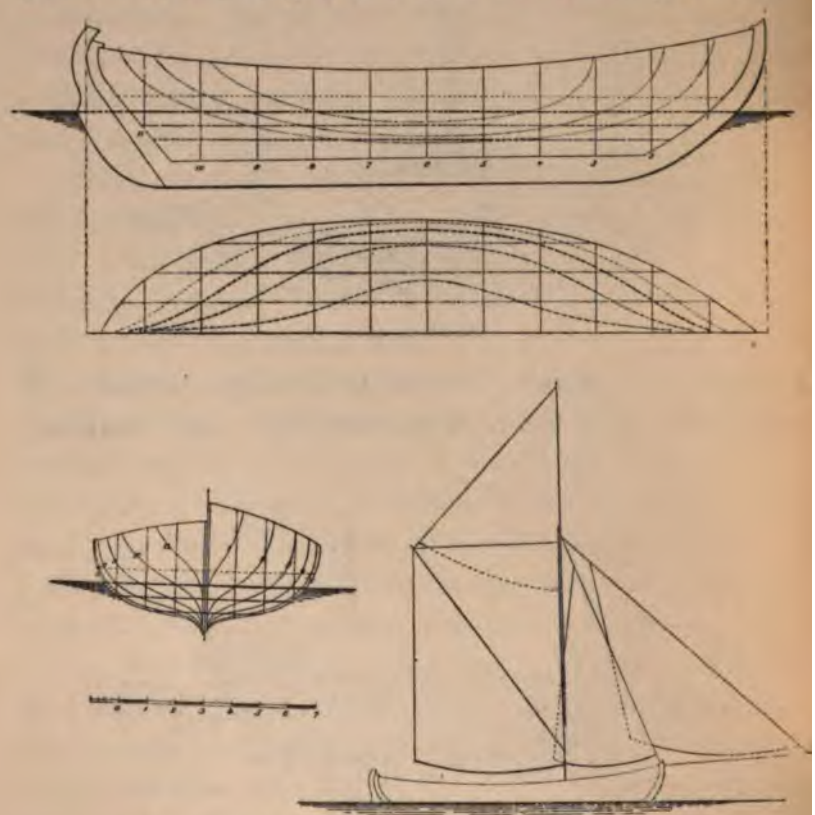
RODVIG BOAT

witness of the lifting power in a sea-way of the rounded forefoot and high-flared bows of these boats.

At the pretty little harbour of Rodvig, however, the boats were mostly decked before the mast; no doubt owing to the very nasty sea to be met with here,

away from the shelter of the Sound, especially when a strong south-east wind is blowing on to the shallows of the Faxe Bight.

These boats are from 24 to 25 feet long over all (22 to 24 L.W.L.), and 8 to 9 feet beam (the beam



SKOVSHOVED HERRING-BOAT, 24 FT. BY 8 FT. BY 3 FT. 2 IN.

more often than not exceeding one-third of the over-all length), and have from 3 feet to 3 feet 6 inches draught. The mast is stepped well back, 8 to 9 feet from the bows, and is a stout spar standing 21 to 24 feet from the deck. The mainsail is a flat-headed spritsail. The

spreet, standing at an angle of about forty-five degrees with the mast, is about 22 feet long, and its end stands a little below the line of the masthead. In its cut and proportions the sail is directly opposed to the principles usually followed in the fore and aft mainsail, the peak standing lower than the throat, and the foot being several inches shorter than the head, so that the leech stands up and down, the peak standing over the

OPEN SKIFF

clew. The shape is, at first, by no means taking to the eye accustomed to well-peaked sails, although it undoubtedly results in a very flat-setting sail when close hauled; and it is quickly and easily reefed, and can be reduced to very snug proportions in a blow.

The foresail is a big powerful sail running on the stout forestay. Like the mainsail it is generally tanned, and together they form the working rig of the boat.

A light triangular or jib-headed topsail hoisted on a long spar and a large jib set on a light-running bowsprit are used in fine weather. It is noticeable that the Danish fishermen, like the Norwegian pilots, hold on to the fore staysail when it blows, although the British smacksman takes it off before any other lower sail when there is any weight in the wind, and prefers his small third or storm-jib which, as he says, presses down a boat much less than the staysail, and has far more lifting power. The Dane or Norwegian, however, owing to the great beam of his boat, feels the pressing influence of a staysail far less, while in his high-flared overhanging bow he has all the lifting power he requires. It is curious how, for racing purposes, we are coming back in this country, as they are in America, to greater beam and greater overhang and flare forward.

Both mainsail and foresail have generally three rows of reef-points in them. The mainsail is held by a rope lacing to the mast. It is stowed in a bunch on the mast, and when set is first hoisted well up by the main halyard and then hauled out to the spreet-end by the out-haul.

When brailing up the out-haul is let go and the two brails are hauled upon, the peak and head of the sail being thus brought down alongside the mast. The sail is never brailed up at the throat while standing on the spreet, as is always done in the Thames barge and other sprit-rigged boats in England.

A very handsome type of little cutter comes from the neighbourhood of Nystead in the Isle of Laaland, less peculiarly Danish in type, and having a transom-

stern and much straighter stem-post. She is flatter floored and more straight-sided than those already described. She has a lofty pole-mast and standing bowsprit, and is used for the herring net-fishery.[1]

The herring fishing extends all through the quiet Belt as well as the Sound. Stake-nets are extensively used along the shores, especially in the spring fishing,

SPRITSAIL HERRING-BOAT

while the greater part of the autumn catches are made by drift-nets.

The solitary island of Bornholm, lying in the Baltic, has some good boats of its own. The open boats used for the important herring and spring salmon fisheries are dandy-rigged, the main and mizen sails being spritsails with a slight peak to them, but still very straight leech. A yard topsail is sometimes carried, and is set on a kind of sliding-gunter topmast

[1] Length, 26 feet; beam, 9 feet; draught, 3 feet 6 inches.

passing through a cap in the usual way, the heel of which comes down to within reach of the deck. The raised stem and stern posts are very straight. They are mostly 22 feet long and 8 feet beam, and about 3 feet 8 inches internal depth.

The larger decked boats used in the salmon fishery are of the sharp-bottomed wide-flared build, very like the smaller Skorshoved boat. Forward the stem-head is carried up some three feet in height, reminding one much of the Gulf of Bothnia boat. From here an open rail runs right away aft to the quarter. A small deck-house aft gives a peculiar appearance to the boat. She is a pole-masted cutter, the mainsail having no boom, and being sheeted to a horse inside the stern.[1] The perpendicular line of the leech and the very square head of the gaff topsail are not at first prepossessing.

The salmon frequent several of the shallow fjords of the islands, and are caught in large numbers off Bornholm on the west, south, and south-eastern sides. The drift-net is largely used, and floating hook-lines are set in deeper water outside.

In the shallow fjords among the islands, in the Little Belt, or up the flats of the Aalborg banks on the eastern coast of Jutland, flat-bottomed open skiffs, as usual stem and stern alike, are used for eel and plaice and other shallow-water fisheries. They are fitted with leeboards or centre-boards, and rigged in one or other of the usual fashions.

All these shallow waters of the coastline bear witness to the ingenuity of the local fisherman in the

[1] These boats run to about 33 feet long, 11 feet 6 inches beam, and 4 feet 6 inches draught aft, and 4 feet forward.

multitudes of stake-nets and basket-work traps with which unwary herrings, eels, and flat-fish, and even more sagacious deep-water fish such as cod, are beguiled. Not even the much-staked waters of the tropics can compete with the Baltic in the multiplicity and variety of these contrivances.

While the principal scenes of the herring fishery are in the Kattegat and through the Great Belt and the Sound to the shores of Bornholm, the cod and haddock frequent mostly the west, or North Sea, coast of Jutland, and the boats used in this fishery are large, powerful craft. Some of the regular North Sea dandy-rigged smacks are now used in this fishery with counters and straight stems, but the visitor to the little port of Esbjerg will find plenty that is novel and interesting in some of the stout cod-line boats lying there, or in the beamy little traders from the south. A typical Danish type of boat used here is about 37 feet in length, 13 feet 9 inches in beam, and over 6 feet in draught. She has a curious turn up to the stem-head, not unlike the snub-nose of some of our modern racers. She is, as usual, stem and stern alike, but has full rounded ends and sharper bottom than is usual. She is cutter-rigged with gaff and boom mainsail, standing bowsprit and topmast of very English proportions.

The open boats are spritsail-rigged, with an also much more familiar shape of sail. They have straight overhanging stem and stern posts, and a great deal of flare and sheer, and are very round at the gunwale at each end. They run up to 26 feet by 8.

In this fishery, which is carried on in many spots round the eastern Jutland coast, and among the islands,

as well as out deep in the North Sea, the hook and line is much used, while stake-nets and traps are used in the Belts, and in the more sheltered shallow waters of the main islands.

Sweden

Perhaps the most characteristic feature of the Swedish boat-builder is his love of beam and solidity.

SWEDISH FISHING-BOAT

No stronger, finer sea-boats are to be found in the world than some of these Swedish fishing craft.

The open boats used in the cod and herring net fisheries are, in their way, perhaps the most remarkable craft afloat. Their characteristics are monstrous beam and great strength. For a length of 17 feet some of them have a beam of 13, and yet, owing to the beautiful curves, there is no sense of awkwardness about them. They are clinker-built, with sharp floors and raking stern-post, and carry one large spritsail. The head of the sprit, instead of being pointed for fitting in the grommet at the mast, is generally forked.[1]

The big-decked Swedish mackerel boat is not less remarkable. That she is clinker-built, stem and stern alike, and has a very raking stern-post, and great beam, goes without saying. She has hollow floor, and a deep heel, and is about the strongest and most powerful sea-boat of her size in the world. There is a double rail all round. She is dandy-rigged, with the sprit, mizen, and main sails familiar in the Danish and Norwegian boats, and a very long topsail-yard running up and down the mast, sliding gunter fashion.

The mast being very stout there is, as usual, very little rigging, there being a single stay on each side, and no runners.

There is a threefold sheave at the masthead to accommodate the mainsail, spreet, and fore staysail halyards. The mainsail is set by hauling out on the standing-spreet, as already described in the Skovshoved boats, and is brailed down in the usual Scandinavian manner to the mast. It can be reefed down very small.

	Length.	Beam.	Depth.
[1] Dimensions—	25 feet 8 inches	9 feet 10 inches	3 feet 3 inches.
and—	17 ,, 0 ,,	13 ,, 0 ,,	4 ,, 0 ,,

The sheet travels on a horse. The mizen has no standing rigging, and has a double sheave at the masthead, through which are rove the mizen-sail and mizen topsail halyards. The sheet leads to a wooden bumkin over the stern.[1]

Of the very remarkable square-rigged cargo-carriers of the inland waterways about Gotenburg I have unfortunately no experience. That they are able to hold a very close wind is apparent even to the hurrying railway traveller, and they will probably amply repay the investigation which I hope one day to give to them.

[1] Small boats of this type are also built.

	Length.	Beam.	Depth.
Dimensions—	36 feet	17 feet 0 inches	7 feet 5 inches.
	28 ,,	9 ,, 10 ,,	3 to 4 feet.

UNDER THE LEE OF KRONBORG

CHAPTER III

NORWAY

THE destiny of Norway remains, as it always has been, upon the sea.

Two-thirds of its population live upon its wondrous coastline. The value of the fishing-trade alone amounts to 10 per cent. of the estimated total national income; and of the trade of the country, local and foreign, 95 per cent. is carried upon the water. The rugged character and comparative poverty of the country inland has obliged the Norwegian race always to turn its eyes seaward; and to this day, as in the dawn of history, the young Norseman looks down the fjord towards the open sea, and sets there the dream of life before him. The history, the art, the poetry, the commerce, and even the politics of Norway all speak the influence of the ocean upon the character of the nation, more potent even than that of the mountain, the forest, and the snowfield. And may this not in large measure be the explanation of the singular attraction which the Norwegian people and scenery exercise upon many of our race? To many a wanderer there is nothing so clean and bright in memory as the little log-built Norwegian village, nestling among the rounded granite blocks, lapped by the ripples from the blue waters of the fjord, and redolent of the whole-

some pine-forest which girds it about on every side towards the hills.

It is not surprising that Norway should present some well-marked and distinctive types of craft. Small steamers have, very naturally, within recent years almost monopolised the coast carrying-trade, and in so doing have put out of work the old sailing-sloops

OLD STYLE COASTING SLOOP

and square-rigged Nordland jaegts which formerly were so characteristic a feature of the Norwegian coastline. Steam has also been introduced into the whale fisheries of the north, and to some extent into the cod and herring fisheries. But the great bulk of the cod and herring and local fisheries of the country, the pilot and other local services, continue to employ and develop sailing-craft. The two well-marked types are the high-

sheered, square-rigged craft of Finmarken, Nordland, and the west, and the deep, decked, fore-and-aft rigged boat of the south. The former displays the characteristics of the old Norse 'longship.' Like her, she is generally a clinker-built, double-ended, open boat, and a wet ship to face the winter seas in, by reason of her low freeboard. But the Norse fisherman of to-day

NORDLANDS JAEGT

retains the same faith in his open boat as did his forefathers, and, as that plucky sailor Bjorn sang of old—

'Salt is in my eyes,
They are bathed;
My strong arms fail,
My eyelids are smarting,'

so the herring and cod fishers weather the northern gales with no shelter but the weather gunwale of their open boat, and with smarting eyes and tired arms bail for their lives with the same cheery spirit.

They credit this old type of boat with marvellous sea-going qualities, and by reason of the faith that is in them, and their own strength and skill, have made this simple old-world boat the trusted companion of their sea wanderings.

The secret of the Nordland boat probably lies in

NORDLAND COD-BOAT

the extreme lightness of the ends, which makes her lively in a sea-way, and in her handiness under oars; for, shallow as she is, and narrow in the beam, she has none of the qualities of a steady-going sea-boat. Her life in bad weather depends upon the handling she receives. The most feminine of boats, she demands a real man for her helmsman, who knows his own mind and has a strong hand to effect his purpose. Capricious, quick, seemingly, to betray her charge, she yet loves to be ruled strongly. It is only this she wants; and once

she finds that she has her master, she will take him through the wildest winter night in safety, yet not

STRILEBAAD

without throwing more water than is either seemly or safe.

The characteristics of build are shown quickest by a drawing. The planks are stout, few, and wide. The width is often as much as 16 inches in some parts; the

OPEN FIVE-OAR HERRING-BOAT

ordinary five-oar herring-boat has only five to her side, and the smaller boats but three. The ends have great

sheer, the sides great flare, necessitating in many cases a waterway inclined sharply in-board and carried from the quarters to each bow, upon which the wooden oar-thowles are usually fixed. A wash-strake is fitted to some of the herring-boats when deeply laden with nets or fish. In the larger boats used for winter fishing, a small cabin is arranged aft by building a bulk-head

NORDLAND BOAT, DEEP LADEN

across at the quarters, raising the gunwale and decking in to the stern. Here a stove and bunks are fitted, and some protection from the weather is obtained. All these boats rely chiefly on oars for progress to windward, having very little grip for weatherly work. They carry a crew varying from three to ten men, and range from quite small boats to 50 or 60 feet in length.[1]

[1] A herring-boat 33 feet 6 inches in length has the following dimensions:—Beam, 8 feet 8 inches; depth, 2 feet 8 inches; mast, 23 feet 3 inches; yard, 11 feet, with from four to ten oars.

They are fast-reaching, running or pulling; but for beating are to all intents and purposes mere rowing-boats fitted with mast and sail, and are generally obliged to wear instead of tacking.

SÖNDFJORD YAWL

The types vary slightly on different parts of the coast. The Söndfjord boat on the west coast, for

ARENDAL YAWL

instance, is almost similar to the five-oar herring-boat depicted, but has more rounded stem and stern, lighter ends, and is a deeper and therefore better sea-boat. The Söndmöersk boat is another peculiar variety,

with heavy ornamental stem and stern posts, and very peculiar construction of timbering. She carries her mast stepped amidships like the others, but is rigged with a short yarded and peculiarly cut lugsail. Around Arendal another class of lugsail boat is used, very like the Shetland boats, and generally known to British sailors as the Norway yawl.

Most of these boats have the long tiller and yoke which is necessitated by the high stern-post generally

SÖNDMÖERSK BOAT

adopted. The ancient Norsemen got round this difficulty by hanging the rudder upon the starboard (stjornbordi) quarter, a system which was generally followed until very modern times, and is still in use extensively in the East.

As already hinted, the rig is very simple, and consists of a single pole-mast stepped nearly midships, on which is set an ordinary squaresail. Like her lineal descendants the 'keel' of our own east country water-

ways, the Nordland boat carries a small topsail, and the proportions of this sail in the two craft are very similar. By means of bowlines carried to the stem-head a very flat set to windward can be obtained. Two rows of reefs along the head, and one along the foot, are the rule. A stout forestay runs to the high stem-head, and is fitted with a purchase for hoisting the mast up with, and shrouds and backstay runners are used in the ordinary way. The main halyard leads through a sheave below the masthead, and is led down aft to a powerful purchase. The old-fashioned and very effective rib and truck parrell is used to keep the yard to the mast. It is the most efficient form of parrell known to square-rig sailors, and never jams.

The old Nordland 'jaegt' which formerly did so much of the coast-wise trade of Norway was rigged in a precisely similar manner. Owing to the comparatively large tonnage of the vessel her gear was proportionately heavier. The pole-mast was a very heavy spar, supported by four shrouds on each side, and by topmast stays, backstays, and a stout forestay and fore topmast stay. The sail was reefed by means of bonnets along the foot, four or five deep, so that close-reefed it formed a handy little sail. The main halyard had a very powerful purchase which led down to the forepart of the high poop, much as in the Arab bagala of the Indian Ocean. A fore staysail was occasionally used. The most characteristic feature about these high-sailed, broad-beamed old vessels was the stern, which is quite a reminiscence of two centuries ago, and may still be seen in many of the trading-sloops and other small fore-and-afters of the Baltic.

Coming to the southern coasts of Norway, the most characteristic type is the old 'Hvalor-baad,' which is

OLD HVALOR PILOT-BOAT

very closely related to the Swedish and Danish Baltic craft, and from which has been developed the modern pilot-boat and the sailing lifeboat (Redningskoïte).

NEW HVALOR BOAT

The hvalor-baad is the most masculine of boats, and in every way is the direct opposite of his Nordland sister. Bluff, broad, strong, and deep, he will face any weather; he has no good looks to boast of, but is

singularly quiet and steady at times when his sister of the north would be cutting capers and longing for the nearest port to leeward. While she is being coaxed and compelled to behave herself by six or seven strong men, the hvalor boat will be standing out to sea with one hand in the tiny cockpit, or having put his pilots into inward-bound ships, will find his way home a hundred miles or more all alone, except for the boy,

TRONDHJEM 'LIFEBOAT'

who appears to be carried rather for sake of company and out of respect for the prejudices of sailor men than for any help he can really give the hvalor boat in getting home.

In common with some of the broad Danish and Swedish craft, this boat has remarkable characteristics. Owing to the great beam, the motion in a seaway is most peculiar; there is a sort of 'I 'm not going to be put out, or knocked about, or splashed' sort of way of going through a sea, which would reassure the most timid landsman. Easy to handle, quick and light to

steer, sure in stays, snug and stiff in a squall, and very fast, this kind of boat is the most comfortable for cruising purposes that I have ever worked.

As will be observed, the rig is very simple, and consists of a stout pole-mast stepped well back in the boat; the somewhat ugly, square-cut Norse spritsail, with peak lower than the throat for mainsail, and a

PILOT

stay foresail, the sheets of both generally travelling on horses.

There is next to no rigging, a single stay on each side with the forestay being all that is required. The mainsail has a rope lacing to the mast, and is set up by hauling out to the spreet end. A three-corner topsail set on a long yard which stands up and down the mast,

and a jib set on a running bowsprit, complete the fine-weather outfit.

The hvalor boat does not pose as one of the aristocracy of the sea, but he is one of the sturdy upper classes who do good work in life. No boat has more truly the instincts of the gentleman of good old family, and one can imagine with what satisfaction the old hvalor boats which are still left snub their anchor-chains, and chuckle to the ripples lapping about their sides, when they see their big-bodied, handsome-looking

SNAEKKE OR SKIFF, CHRISTIANIA FJORD

offspring, the modern lodsbaad, passing in or out to sea.

The 'lodsbaad' or pilot-boat now built is an improved hvalor-baad. It is an interesting and significant fact that the improvements which have been effected in the lines of these boats, and in their speed and weatherliness, are largely due to a countryman of our own, Mr. Colin Archer, who has long been settled at the little port of Larvik, and who has made an undying name for himself as the designer of Nansen's ship the *Fram*. Norwegian fishermen owe him a great debt

for the manner in which he has devoted himself to the improvement of these classes of vessel.

Following the law of development which is rendered almost universal among types of sailing-boats by the ever-increasing demand for speed and for greater sea-keeping capacity, the pilot-boats have increased steadily in size. This, as in the case of the larger Danish boats of the same sort, has necessitated the substitution of the gaff and boom mainsail in place of the old sprit-

OFF CHRISTIANSAND

sail, the spreet in vessels of such tonnage being a heavy unhandy spar in a rolling sea, involving serious danger in case of the heel becoming unshipped from the grommet. Main and foresail are the sails usually carried, the jib and topsail being fine-weather adjuncts. The boats carry outside ballast, and are always fully decked. Owing to their roominess they are very comfortable below, and in them their crews can literally face any weather that blows, even in the terrible Skagerak.

Redningskoïte[1]

In 1892 a society was formed for saving the lives of shipwrecked mariners. This society has found a wide field for its operations principally among the fishermen on the north and west coasts of Norway, who collect in large numbers during the great cod and herring fisheries, which, as already explained, take place largely in the middle of winter, and in open boats.

The lines given in the accompanying diagrams represent the type of boat which has been found most suitable as a life-saving boat among these fishermen, being remarkably handy, able to stay out at sea in any kind of weather, and powerful for towing smaller boats to shore when caught in a gale off the land.

The society has now built over fifteen of these 'Skoiter,' and there is a constant call among the fishing population for more of them.

A 'Redningskoïte' is very strongly built. The stem and stern post, outer planking, rudder head, stanchions, combings, and other principal parts are oak. The frames are double, built of 'grown' yellow pine, the floors running across the keel and consisting of the stem and root of the tree. Between each frame is fitted a steamed and bent oak rib which is riveted to the outer planking. They are carvel built. The fastenings of the outer plank to the frames are wooden treenails (juniper) and galvanised iron spikes above water, metal spikes under waterline. Decks 2-inch pine. Inside the frames is worked a water-tight lining from gunwale to the cabin deck, which is likewise water-

[1] For the description and lines of these boats I am indebted to Mr. Colin Archer.

tight and firmly fixed, so that if the outer skin is stove the boat will float on the lining. There are four water-tight bulkheads. The cockpit or helmsman's compartment has water-tight floor and sides, and is sometimes furnished with self-clearing pipes leading out-board. The crew consists of four hands.

The sail plan explains itself. It is designed for strength and handiness. The strongest canvas and best rope and blocks are used. This is of the greatest importance. No instance has occurred of these boats being forced to seek shelter from stress of weather, although they frequently stay out in heavy gales all night and in the middle of winter. The chief danger seems to be the giving way of some part of the gear.[1]

It will be noticed that these boats retain the characteristic shape of the old hvalor boat, but that, in common with so many growing types of the present day, they have, with their increase in size, taken to the handy ketch or 'dandy' or 'smack' rig, as our fishermen variously call it; they have become carvel built; and like the lodsbaad they have adopted the modern speed-giving device of outside ballasts.

In 1894 I built a half-decked 22-foot boat in Siam, very much, oddly enough, after the lines of the modern Redningskoïte. In this little craft I travelled long distances in the Gulf of Siam, and I can vouch for the splendid sea-going qualities of such a boat.

It will be noticed that although the ends are well raked, there is no excessive cutaway, and the large pro-

[1] The iron keel weighs about 6 tons, and is fastened with 12-14 galvanised iron bolts 1½ inch, set up with washers on the keelson. The boat carries about the same weight of iron ballast inside, stowed under the cabin floor. Displacement about 26 tons.

portion of straight heel enables the boat to lie well to the wind and run a steady course, both important points in a sea-going vessel.

Of the larger boats it remains to mention the Bank-fiskerskoïte. A deck fishing-boat so named has long been used for open-sea fishing off the west coast of Norway. The design sent me by Mr. Colin Archer is only one of many models used, each builder having his own style. Several boats have, however, been built of the kind here represented, some of them being considerably smaller, for the Lofoten fisheries, but very much on the same lines, and they have given great satisfaction

BREVIK SKIFF

for seaworthiness, handiness, and good sailing qualities. During the last year or two an evolution towards steam has been going on, and here, probably, as elsewhere, steam power for 'bank' or open-sea fishing will soon be extensively used.

The drawing of the Bankfiskerskoïte shows a

metal (cast-iron) keel. In fishing-boats this is quite a modern innovation which has not generally been adopted. In pilot-boats it is more common. In a boat of the size represented the cast-iron keel will weigh about $2\frac{1}{4}$ tons, or about one-third of the total ballast. The displacement will be about 17·5 tons. But in these days of keen competition, and of long-distance deep-sea fishing, Norwegian fishermen begin to find they can afford to neglect speed as little as Scotch or English fishermen.

The Seilsjegte[1] is a style of boat used by the fishermen on the south part of the coast. They are

OFF BREVIK

open boats with a washboard, and range from 18 to 25 feet in length, 20 feet being the ordinary size. They are clinker-built, like the Nordland boats, sail very well on all points, and are good sea-boats, although like all open boats they require careful handling. For the herring fisheries a somewhat larger boat of a similar type is used. They all carry

[1] Termed *snaekke*; probably the Norse *snekkja*, a 'small longship' mentioned in the sagas.

a three-cornered topsail in addition to the usual fore and mainsails.

In the neighbourhood of Brevik and Larvik one may see lots of these boats out fishing on fine evenings, for every one living by the waterside, whatever his occupation, owns a boat. Occasionally other rigs are seen, like the one depicted.

In Christiania fjord the pleasure-boats are mostly of this type, though some charming modern decked yachts are now in fashion. Clinker-built with three to five wide planks, and wooden treenails, sharp raking stern, and high bow, is the usual type.

CHAPTER IV

HOLLAND

EUROPE owes to the Land of Dykes more than it generally cares to remember. Holland has been the schoolmistress of modern Europe. It first learned and taught the principles of modern government, and the true meaning of political and religious liberty; it has led the van in art, in agricultural science, in physical research, in modern finance. It has taught more conclusively than Phœnicia, Venice, Spain, or Portugal the true meaning of Sea Power, of over-sea colonisation. And of the nations of Europe the British have best learned from her what she had to teach. Her mantle has fallen upon our shoulders.

To no man is the greatness of our debt to the Dutch more forcibly brought home than to him who has widely used the sea, in whom something akin to reverence springs up as he roams, and finds everywhere about the globe the footprints of this steadfast sailor race. The very sea-terms in everyday use all across the seven seas, alike by Briton, Yankee, and every Northern race, were in the mouths of De Ruyter and Van Tromp.

Not long ago I mentioned some of these aspects of Dutch history to a Transvaal Boer. 'What!' he said, 'were we ever a maritime power? had we ever com-

mand of the sea?' I told him further how ultimately, after hard knocks, it had been lost to Holland and won by Britain. He whistled in a thoughtful way, and then nodded his head: 'I see,' he said, 'it was by sticking to it, same as here.'

To this day Holland remains the land of the sailing-boat *par excellence.* It is the Mecca of the modern yachtsman. From the Dutch English royalty and our old friend Samuel Pepys first learned about pleasure craft: from them came our earliest yacht models at the beginning of the nineteenth century. From them the Thames barge has its spritsail, leeboards, most useful of shallow-water contrivances, and no doubt its exquisite taste for bright paint.

Certainly no Western race is so amphibious as the Dutch, and no land animal except the duck takes so readily to navigation.

More than any types of boat, those of Holland have been influenced by the peculiar waters which they navigate; better than most they satisfy their peculiar requirements. Indeed, no nation but the Chinese has had occasion in modern times so little to alter its accepted types of craft. Three centuries ago, in lines and in rig, Dutch small craft were almost the same as they are to-day. Our own special types, as such, are almost entirely developments of the past century, tracing certain peculiarities from older, rougher, and in general smaller craft, which were their ancestors, but owing their growth as a distinctive class to the great increase in coast trade and sea fisheries, and the unparalleled activity in boat-building which has been the result. In fact, the consideration of any sea-going fishing-boat in

the British Isles will show the very modern development of the majority of present British types. The nineteenth century has been an era of sea boat-building as much as it has been an era of steam. The small, open, bluff-bowed, roughly rigged fishing-fleets of the early part of the century, down in fact to the forties and the fifties, have given place to large-decked, clean-lined, sea-going fleets, rigged and equipped with scientific

FLUSHING MUSSEL-BOAT

precision; more powerful, more speedy, and infinitely more numerous.

But in Holland the requirements of her internal trade to-day are almost identical with what they were three centuries ago. The country had reached almost its highest state of agricultural and commercial efficiency at the beginning of the seventeenth century. Hence while in England, in the comparative backward state of her development, the small sailing-vessel was in its infancy, Holland, great in the trade and the councils of the nations, had developed and perfected her own

types of craft, much as she had done her own methods of communication, of government, and of trade. And to these types, with the characteristic tenacity of the race, Holland has been true.

The old Dutch Zee schuyt of the seventeenth century is familiar to us from the etchings of Van der Laan, and the wonderful paintings of Van der Velde the younger, and of Bakhuizen and others of the great

OLD ZEE SCHUYT HAULING NETS
(AFTER VAN DER LAAN)

Dutch school of marine painting of the seventeenth century.

The pictures of these great artists, remarkable alike for their wonderful aerial perspectives, the wide light of their skies, the restraint of their colouring, and the boldness and accuracy of their drawing, show that while the present schuyt rig was in existence at that time, the sprit and squaresail rigs were very common.

The Zee schuyt of the day, probably the earliest form of herring drift-net fishing-craft, had two masts, main

OLD ZEE SCHUYT, SEVENTEENTH CENTURY
(AFTER VAN DER LAAN)

and mizen. The latter carried a single squaresail, which was frequently kept set when riding at anchor

OLD SCHEVENINGEN BOAT, SEVENTEENTH CENTURY
(AFTER VAN RUISDAEL)

or hauling nets. The mainmast was usually a single pole, but sometimes carried a topmast. It was placed

well back, even abaft the midship section, in the position rendered familiar by the old gun-ketches of the beginning of the nineteenth century. A lower course and square topsail were set upon it. In this rig we have the precursor of the schooner-rigged galliot on the one hand, and the three-masted square-rigged ship on the other.

It will be noted that the fore triangle with this rig was very large, and from some early etchings of the period it appears that it was filled very often by a short

EARLY LUGSAILS, SEVENTEENTH CENTURY
(AFTER BAKHUIZEN)

foremast with a single squaresail upon it, as an alternative to large forestay sail and occasional bowsprit and jib, which seem to have replaced it by degrees.

The Scheveningen boats of the time are shown by Van der Velde, rigged with the two square-rigged masts, but in this case very often the arrangement of the masts was that of main and fore masts, the mizen being apparently omitted.

Bakhuizen shows this square rig without a mizen, and with yards braced round, and tacks so hauled down forward as to form practically a lugsail.

The vessels themselves had the round stern still familiar in Dutch craft. The poop was in those days higher than we are accustomed to see it. This high poop, retained to the present day in the sea-going junk of China, in the dhow and other Eastern craft, although considered by Western sailors to be ugly and

REEFING SPRITSAIL (AFTER VAN DER VELDE)

unshipshape, is in reality a very seamanlike and convenient provision in any sailing-vessel; and often when the writer had it not, he longed for it, and when he had it, he thanked Heaven and the boat-builder for a staunch dry poop whence the vessel could be worked with some degree of comfort and command when every other part of the ship was awash.

The leeboards of the seventeenth and eighteenth centuries were of the same shape as those still in

use—the long, dagger-like board in the shallow boats, the triangle of the ordinary sea-going craft, and the almost circular shape of many river boats.

The clinker build and the wide, flaring bow and curved stem-piece were the same as at present, and the tall pole-mast, gay colouring, large, easy-running blocks, and long vanes have little altered. The sprit-sail and the gaff mainsail are the same.

DAM SCHUYT (AFTER VAN DER LAAN)

No European type of craft, with the exception of the open Norse skiff, has such antiquity as this of the Dutch.

Ruskin in a well-known passage condones the inaccurate drawing and ignorance of seamanship displayed in the works of marine artists of his day by the statement that art which reduplicates art is necessarily inferior, and that a ship in full sail or a perfect boat is an 'ignoble subject,' and can never become the subject of noble art because it is of man's making.

Yet the exquisite little studies of Van der Velde, with all their play of light and cloud, of wind and sea, cannot be surpassed in landscape painting. They depend for their effect on the accuracy of delineation of the outline of the wave-cap, the curve of the sail

OLD DUTCH KETCH (FROM AN OLD PRINT)

and spar, the strain of the rope, the heel of hull, or the direction of swing of an anchored ship.

These things tell truly the force and direction of the wind in the picture; they give the atmospheric effect which is sought to be expressed; they are subject to unalterable laws, and if the artist is oblivious of them he may as well forget the laws of light or the law of gravitation. If the human frame must be studied and

drawn with reference to anatomical facts, if drapery must hang truly, so much the more must the sail hang furled according to law, or draw and belly truly in the wind as Nature alone permits it. The sail cannot swell in untrue curves or fly against the wind, the sea-caps cannot run counter to it, any more than a building can stand without foundation or water run up hill. Many a sail one has seen in pictures wrongly

OLD SCHUYT (AFTER VAN DER LAAN)

bent which would blow away or send a vessel stern first, many a hull wrongly drawn which would infallibly swamp, or could not have come out of any boat-builder's shop. This cannot be art, whatever imaginable colouring it is shrouded in. Van der Velde, using his vessels as accessories to interpret his thought and to illustrate the restfulness of calm, or the war and motion of high winds in the wide tide estuaries of Holland, has never been surpassed in his expression

of atmosphere, sun, and wind, and this by following the very laws which sea painters in the nineteenth century so long thought they could dispense with.

In nothing did the Dutch Marine School more greatly show their artistic sense than in their appreciation of the fact that the sailing-boat itself is an object for the highest art, in so far as it is used as an expression of the spirit of the picture, or as a means of interpretation of Nature.

The fishing-boat in harbour, except in so far as it displays the impress of its calling and the scars of the sea upon it, is no very striking thing, perhaps. But the moment it is at sea, breasting the rollers, heaving its rounded sides through the wave-crests, or throwing off the attacks of the threatening breakers, bowing beneath the persuading pressure of its sail-spread, springing up and stopping to fist off the green seas, and plunging again into the long water-valleys, then it becomes a new spirit, a thing of life, of purpose, and of strength.

This is no longer the dead thing which was built by man. It has been kissed by heaven; it is transformed into a morsel of great Nature. Its sails follow no curve ever made by man, its ropes tauten to a force coming at no man's bidding. It is caught and tossed, and swayed and slapped, by the playful buffets of a stupendous power of which yet it seems a part, the secrets of which it knows and bends to its own purpose.

It is this transformation into life, this tuning to Nature's keys, which laid hold of the imagination of the best of the Dutch masters, and made them see that

if a ship is in itself wonderful and beautiful, it is in its highest form when in the hands of wind and waves, and that then it is indeed removed from the realm of mere things. And in this, its highest manifestation, it was their ambition to paint it.

Ruskin's comment upon the Dutch Marine School of the seventeenth century, although robed in the delightful language which is so peculiarly his, seems

DUTCH PROTOTYPE OF THE BARGE

curiously inadequate. He shows an utter lack, surprising in such a mind, of that appreciation of fen and lowland country scenery, which has given modern art much of its landscape inspiration. He perceives not the wide skies dear to the heart of the fenman; he is impatient with the short waves which those who navigate in tidal estuaries must put up with. He forgets that the sailing-craft of that day was high-pooped and was beflagged beyond modern wont, and he misses their historic accuracy. Surely Van der

Velde, of all masters, had that 'high instinct of momentary perception' which the great critic declares to be necessary to the drawing of a sailing-boat?

Nor will criticism of the shallow impurity of the seas depicted by the Dutch painters avail if Turner's seas are to be accepted. For Turner followed the Dutch School as much in painting the sharp, short seas of shallow tidal coasts as in his studies of craft,

SCHUYT

in which, as in 'The Shipwreck,' the influence of the Dutch School is most marked.

Ruskin lived only to see his own sixth or 'modern' period of marine painting; he did not know that later, or seventh period, as we may call it, which must always be famous to all lovers of wild, true nature in the works of Wyllie, Dixon, Somerscales, Napier Hemy, or of Blacke and his compatriot Andersen.

To this school belongs the honour of having rescued art from an untrue conception of the sea, and having demonstrated the presence of law and order upon the water as upon the land. By the aid of modern ship-

ping they have interpreted the sea's moods, its toil, its fickleness, its glory and its strength; by truth and by study they have set forth as the old Dutch masters of the seventeenth century essayed to do, and so well did, through the medium of the Dutch craft of that day.

Homage to Turner is yet possible to the man who seeks for truth to Nature's laws in all painting of the sea; for wild as was his imagination, truth lay in his wind, and his craft were always possible, even if canvased at times in a way to strike terror to the average coastwise skipper. He was curiously unequal in his delineation of vessels, his square-rigged ships showing a general accuracy of drawing and understanding of sea matters which often seem quite absent in his fore-and-afters. But these faults are more apparent in his engravings than in his paintings, where they are redeemed by the magnitude of his conceptions. The back wave off his Calais Pier, the down-river light in his Blythe sand, so true to those wide eastern estuaries of Britain, are interpretations which must be appreciated by all sailors. His general influence in the direction of accuracy has been too much ignored by his admirers, and but for the modern sea-school of Wyllie we should still be immersed in untruth and clumsiness in all our sea-scapes, notwithstanding the assistance of photography towards accuracy in the delineation of certain phases of sea life.

The distinctiveness of Dutch craft is not less marked than that of the Chinese. Even to the artist, often so blind to nautical facts, many of the Dutch characteristics are frequently apparent. The great, commanding-looking rudder, the round, merry-looking

bow, the comfortable tumble-house of the topsides, the tall, splendidly proportioned pole-mast and the long vane at its summit, the short gaff and long boom, the bright colouring and spotless polish—all these are as much a part of Dutch scenery to the majority of minds as are lock-gates or windmills. The whole has an aspect of old-world incompetence and picturesqueness which is utterly fascinating.

BOATS AT HAARLEM (FROM A SKETCH BY E. W. COOKE)

Yet in fact, in that slow-looking ship, the Dutchman possesses a combined floating home and cargo carrier which is second to none in handiness, smartness, comfort, and speed in the waters she navigates.

Among the more familiar types are the Eel schuyts and the Scheveningen pinken. The former have been beautifully delineated by E. W. Cooke, and their appearance is well known to Thames estuary yachting men. They are perhaps the most representative of Dutch sea-going craft. They carry the usual short gaffed mainsail, setting an infinitesimal jib-headed top-

sail above it. The main boom plumbs the stern-post, thus being securely out of the way for passing through locks and pushing through crowded inland waterways. Everything on board a Dutchman is calculated with reference to the necessities of inland navigation. The bowsprit is a running one, and the huge stay foresail is ample head-sail for ordinary work where quick turning is required. The stout rubbing strakes, which to the

ON THE MAAS

unaccustomed eye give such an appearance of clumsiness, enable a schuyt to jostle her way into the most crowded quarters with delightful impunity. The short gaff itself is a concession to riparian owners; this bringing of the centre of effort of the sail-area low down prevents excessive heeling and saves many a farm window and many a pensive cow from unceremonious annihilation. Partly with the same object, and partly to counterbalance the want of depth of hull, the Dutchman has adopted the great beam, which

is perhaps to the ordinary mortal his most marked characteristic. The rounded stern with stern-post and rudder outside is, except in some smaller boats such as small coast pinken, almost invariable; and any one who has been through many lock-gates in a craft with a long counter will appreciate the value of this style of build. The Dutchman is enamoured, and

TURF BOAT

rightly so, of the full round curve, and has rarely descended to that ugly though admittedly useful method of ending a boat, the transom-stern. With exquisite taste he so uses his white paint about the great varnished rudder-head, and his green round the little stern-ports, that the stern of his ship is generally a thing of beauty indeed. But this form of round stern, with the heavy quarters and the bluff bow,

although adding to the carrying capacity of the vessel, greatly increases her appearance of beam, and makes her look more clumsy than she really is. As in the case of the Chinese junk, however bluff or unwieldy the upper works appear, the under waterlines are generally very 'sweet,' and Neptune, to his credit be it said, has ever a soft heart for a full sweet curve.

The solidity and strength of Dutch construction is

'PINK' OPEN BOAT, SCHEVENINGEN

positively refreshing in these days of light scantlings, and the fashion of polishing the oak of the hull adds greatly to the impression of power in these vessels.

The Scheveningen boats are clinker-built and have the characteristics of Dutch craft almost to the extent of caricature. But going to sea or landing in the surf on that cruel coast call for a bit of good construction. It is noticeable that many of these boats carry a small

mizen which is the peculiar sail of sea-keeping craft, and this sail, as might be expected, is never seen inland.

The old-fashioned 'galliot' was similar in construction and was generally rigged as what we now mostly designate a 'ketch,'[1] but carried in addition to the modern fore-and-aft sails the older square topsail, t'gallantsail, and course on the foremast, as very many Baltic ketches do to this day.

'PINK' OR 'DUM,' SCHEVENINGEN

The rig appears to have developed in two directions: by the gradual enlargement of the mizen, and the bringing of the mizen-mast further forward, until the sail assumed the proportions of mainsail, from which comes the modern topsail schooner so familiar among the small traders of our coasts; and in the other direction by the gradual abolition of the square yards, leaving only the fore-and-aft sails of the modern ketch, or dandy, with the possible retention of a lower

[1] The Old French *quaiche*; the Spanish *queche*.

yard only for a lower squaresail, the superior advantage of which over a fore-and-aft sail for fair winds is admitted by every sailor.

The gradual development in both directions may yet be seen in all stages upon the Dutch, German, and

DUTCH GALLIOT (AFTER E. W. COOKE, R.A.)

Danish coasts,[1] while the results are more distinctly apparent along our own shoreline.

The topsail schooner has assumed with us something of the nature of a national rig for our small coasters, while the ketch has become equally distinctive as the rig of the British trawler[2] and of the billy-boy, a type of flat-bottomed, leeboard-carrying coast trader.

[1] Chapter I. [2] Chapter V.

The very commonest of the former is apt to blind one to its merits, but it is in fact the best combination

EAST COAST LEEBOARD DANDY OR BILLY-BOY

of the square rig with the fore-and-aft which exists, and it presents all the advantages of each. The lower

YANKEE SCHOONER

sails being of the fore-and-aft type, a deck-watch of two hands will suffice in ordinary weather to put about

a vessel of 200 or 300 tons, and make and shorten sail; the square topsail and topgallant sail on the foremast are not too large to be also easily handled by one or two men, and are big enough, especially with the big fine-weather course, to add many knots to every watch with the wind anywhere abaft the beam. The

TOPSAIL SCHOONER

advantage of a squaresail placed high up on the foremast in running before anything approaching a gale of wind with a heavy sea is well known to most sailors.

It seems peculiar that in America, where the best development of the fore-and-aft schooner rig is to be seen, the square topsail never seems to have been in much favour. While on this side of the Atlantic the three-masted schooner and the barquantine are increas-

ing in popularity, and the square-rigged foremast is made a great feature, in America the number of masts

YANKEE FOUR-MASTER

increase until five (and even seven) masts are reached, and never a square sail is seen aloft.

Yet it cannot be said that the Americans do not know what is best in schooner-building and rigging;

THREE-MASTED SCHOONER

the high-flaring bow, the sail-carrying power of the wide quarters, the tall lowermasts, long main-boom,

and short gaff which are so distinctively American, also combine to make schooners the like of which we do not know. Yet it is probably the old story, that

HALIFAX SCHOONER—WINTER RIG

each is suited to its own waters; the very length of the lowermasts and weight of boom in the American boats may be strong arguments against further weight

RUSSIAN THREE-MASTER

from square yards being stationed permanently aloft, while the more moderate-sized spars used round our stormy coasts may render such top-hamper harmless,

and even, as already hinted, of positive advantage four times out of five in a strong blow.

The Russians have followed the Yankees to some degree in adopting the fore-and-aft rig for vessels carrying even three masts, and many vessels of this type may be seen in the Baltic, as a rule neither remarkable for smartness or sailing qualities in the hands of the crews who man them.

The advantage of the fore-and-aft rig combined

BARQUENTINE

with squaresails on the foremast is every day more apparent in the increasing number of three-masted schooners and barquentines which are used in our coasting-trade, and which, like the brigantine, are a development of the topsail-schooner sail plan on larger craft.

In this connection no sea fact is more remarkable than the total disappearance of the brig-rig for small coasting-craft. Turner, Cooke, and all coast artists of the earlier part of the nineteenth century bear witness

to the universal adoption of this rig along the coast, especially in the coal trade; and in all early views of the Thames these vessels, with the big single topsail and topgallant sails and their enormous fore t'gallant staysail, form a conspicuous feature. They have de-

OLD COLLIER BRIG (AFTER E. W. COOKE, R.A.)

parted before the superior handiness of the fore-and-aft sail for weatherly work.

In the other direction, that of the ketch. The Dutch appear, as already remarked, to have set the fashion for this very handy rig in the Baltic and North Sea. It is seen in the Zee schuyts of the seventeenth century, and in our own and other navies for bomb vessels, in those days with squaresails on both masts; and though it went out of fashion during the first half

of the nineteenth century, the fore-and-aft ketch or dandy-rig of to-day may be said to be the rig *par excellence* of the North Sea. Not only the Danish coasters, but those of our own isles, use it extensively; practically the whole of the trawling fleets of the North Sea, of whatever nationality, have adopted it. It is curious to note in this connection that our east coast

SWIM HEAD EEL CATCHER

fishing-craft, hailing south of the Humber, which only thirty years ago favoured the lugsail, have almost without exception altered to the ketch, or 'smack-rig,' as it is now often called. Even Whitby has followed the fashion, and Grimsby also. Yarmouth and Lowestoft were, when Houldsworth wrote, well known for their fine lug-rigged boats; yet now they and Ramsgate to the south, as well as many channel ports on both sides,

have adopted the rig for trawling. What is the reason? First, the fore-and-aft rig was found more convenient than the lug for heaving to, as the trawler has to do for hours at a time, the main tack being easily triced up and staysail laid aback. Then the one mast of the

AT HAARLEM

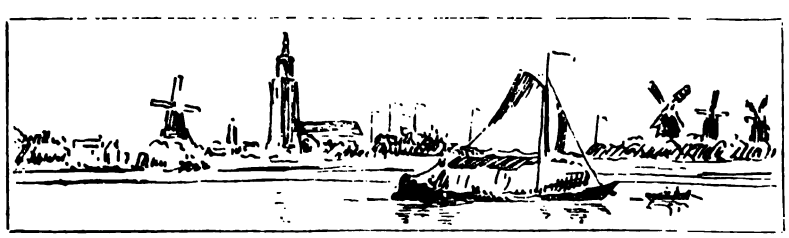
old 'smack' went out in favour of the two, with the short main-boom and easily handled mizen. Every one who has sailed a ketch knows her handiness for a small crew. And for this rig we may largely thank the Dutch. As befits our stormy seas, however, we

have reduced the tall mizen of the Dutch or Baltic ketch to a low pole-mast, which is not so handsome-looking, but is more to the purpose in our seas. It is noticeable also that the short boom of the Dutch and Baltic mizen has been considerably lengthened in British seas to give that width of foot which is dear to the British sailmaker.

The 'swim,' a most primitive form of bow, such as with little difference may be met with in the rivers of Bengal or of Central Europe, as well as in many Chinese sampans, in which naval architecture has not progressed with particular rapidity (having remained practically stationary for some thousand years), may still be seen in the Botters at Haarlem and many places in the canals, as well as in the eel boats, of which a fleet is often to be met off Flushing.[1] In a vessel of light draught this shape of bow is far less injurious to speed than might be imagined, although in a short head-sea it is inclined to 'slam,' and light displacement Dutch yachts of this build which are given a good sailspread are particularly fast in narrow waters.

A book might be written on the Dutch boats of the day, and a rich reward awaits the man who can devote himself to the study of them.

[1] I have seen one of these boats as far west as Hirst Castle.



VLAARDINGEN

SCOTCH ZULU

To face p. 90.

CHAPTER V

SCOTLAND[1]

'Fife' or 'Fifie' Model

On the east coast of Scotland, from the English borders to Whitehills in Banffshire, and along the coasts of Caithness and the Orkney Islands (and during the last twenty-five years, the Shetlands also), the boats used in the herring fishing have always been of the 'Fifie' build, with very little rake on either stem or stern.

Sixty years ago these boats only measured some 30 to 35 feet of keel; they were clinker-built, and of light draught of water. About the middle of the century fore cabins began to be introduced, and the length of keel gradually increased, till by the end of the 'sixties' 40 feet was the usual length for a new boat.

The herring fishing had hitherto been confined to the inshore waters; but fishermen now began to push farther seawards in search of the herring shoals; full decks began to come into use, a large open hatchway being provided to facilitate the working of the nets.

Decked boats were first built by the Royal National Lifeboat Institution in order to prove to the fishermen the greater comfort and safety to be derived from full

[1] For much of the most interesting information in this chapter I am indebted to Mr. Robert Duthie of the Scotch Fishery Board.

decks. From 1867 onwards the fashion steadily grew as the advantages became more and more apparent.

As fishermen have continued pushing farther and farther to sea, both at the herring and the cod and ling fishings, the tendency has been to increase the size of boat. The carvel build, first used in the Firth

OPEN FIFIE, 1865 (FROM A MODEL)

of Forth, has almost entirely superseded the clinker or clench build in the case of first-class boats.

The model has also been greatly altered. Instead of the old round, tub-shaped craft of half a century ago, those now being built are finely modelled vessels of 60 to 70 feet, with yacht-like lines, longer keels, deeper bilge and greater draught of water, especially aft.

The usual rig of the east coast fishing-boat is the lugsail, with jib and mizen, different sizes of the latter

being used according to the state of the weather. A big jib and mizen, both of which require 'booms,'[1] are used in fine weather. When it blows hard, these long 'booms' are both taken in; but a small mizen, with shorter boom, is always used when going close-hauled, even when under low sail. Owing to the great length of these boats, there would always be a risk of their missing stays if no mizen were used,

FIFIE, REEFED, WITH SMALL MIZEN

as the sail would then be all upon the fore part of the boat. Even in very rough weather, therefore, a small jib-headed mizen is used to keep the boat up to the wind, and facilitate the process of staying.[2]

[1] In Scotland 'boom' is used for any out-rigged spar, whether bowsprit or jigger-boom, fore or aft.

[2] The cost of one of these boats, including steam hauling gear, sails and other outfit, used to be from £500 to £600, but cannot now be quoted at less than £700, owing to increased cost of material and other causes.

One recently built at Fraserburgh was 66 feet keel and 70 feet over 'stems'; 21 feet beam outside gunwale, and 20 feet inside plank; 7 feet

In 'staying' small lug-sailed boats the yard is usually 'dipped'; but with all the larger boats the sail is lowered to the deck, unhooked from the 'traveller,' hooked upon the 'Burton' stay, and swung aft and then forward on the other side of the mast. The process is a dangerous one in rough weather. Some crews occasionally carry a 'working' sail at the great line fishing in winter and spring, and they are thus able to have a sail ready on each side of the mast, lowering one and setting the other every tack, the working sail being generally smaller than the other, often the sail of an old boat. When 'beating in' lines with a lug-sailed boat, the tack is usually at the foot of the mast, and the 'Burton' stay set up on the side opposite the halyards, to strengthen the mast.

The Scotch lugsails are generally made with reef cringles all the way up the luff and leech of the sail at intervals. I have counted thirteen such cringles on a fore-lug. All are meant for use when required. Scotch fishermen never take their mizens forward as

deep inside, and 40 tons register. The carpenter's account was £430; iron work, £52; sails and outfit, £150, and steam hauling gear, £105;—total, £737; and the following outfit of sails, etc., was provided:—Foremast, 64 feet long by 1 foot 8 inches at the deck; mizen-mast, 55 feet by 1 foot 2 inches at the deck; jibboom, 54 feet by 1 foot 1½ inches; foresail, 310 yards; jib, 150 yards; big mizen, 210 yards; winter mizen, 150 yards; jib-headed mizen, 90 yards, and storm mizen, 40 yards. The boat has also two canvas 'drogues' or floating anchors; one, the old tow net-shaped canvas cone, and the other, topsail-shaped, such as is carried aboard the smacks that go to the Faroe and Iceland cod-fishing. These drogues are also termed 'fly anchors' by the fishermen. They are often used to check the way of the boat when running into a crowded harbour. For this purpose it is placed on the quarter, with a short rope fast to it, ready for heaving over before the entrance is approached.

The large modern Scotch boats all carry steam-winch or capstan for hauling nets and hoisting sail—a device first developed by the Cornish boats—as well as in most cases a 13 to 15 foot dinghy.

the Cornishmen do, unless the foresail has given way. The bunch of canvas, after reefing, is heavy and awkward to handle.

The large mizen is always of lighter canvas than the foresail, as it is only for use in moderate weather.

Moray Firth fishermen often keep a complete 'winter rig' for their big boats. The winter spars are shorter, and the sails smaller than in summer.

The lug rig is more than holding its own among the Scotch of the east coast. For this there are pro-

FIFIE, WITH RAKED MAST

bably several reasons. First, the smack-rigged boats that have been discarded were getting too small, and their owners going in for larger boats preferred the rig they were accustomed to. Secondly, many of the smack-rigged boats were rather flat below the counter, and thus struck hard in a seaway. The counter is not a favourite among fishermen, and apparently they are easily put off it back to the old build, and with that to the old rig. The Moray Firth sailmakers have not had a tithe of the experience of making smack sails that they have of lugs. The result is, that they have attained to a high state of perfection

in making lugsails (and in fact in their own way turn out sails as good as anything made by yacht sail-makers); but they have not made the same progress with fore-and-aft sails, and really do not turn out the same class of work when they get an order for the latter.

Then the simplicity and lack of gear about the lug rig, and the handiness with which everything can

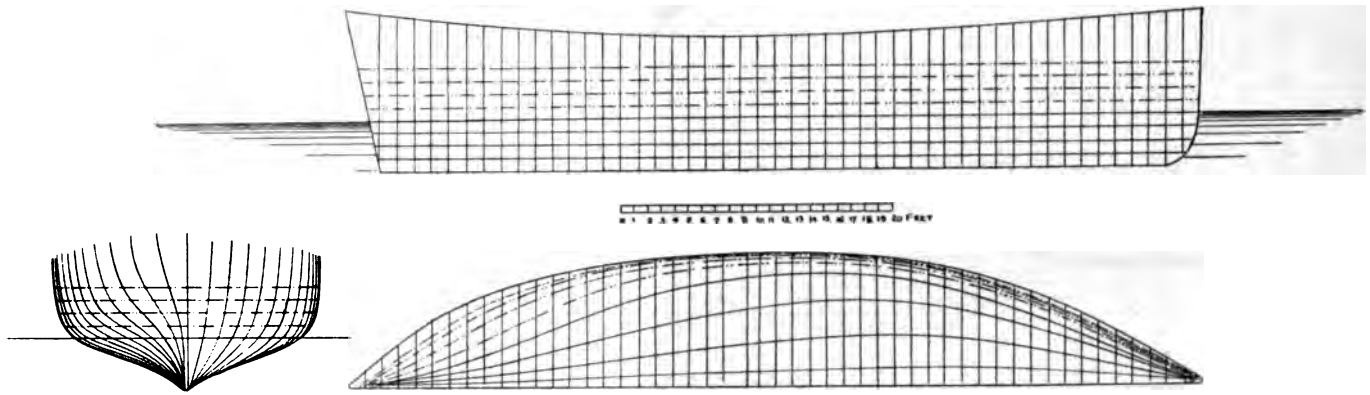
SMACK-RIGGED FIFIE, DUNDEE

be unshipped, makes it *par excellence* the sail of the drift-net fisherman. Finally, the modern shape of high-peaked lug, into which the old-fashioned square-headed sails have developed, is unequalled for set and speed-giving power.

'*Smack*'-rigged[1] *Herring-boats*

Among the villages lying between Fraserburgh

[1] *i.e.* cutter-rigged, or in some cases with a mizen. The term is used among fishermen for any fore-and-aft rigged vessel, whether strictly cutter, dandy, or ketch—wherever, in fact, the gaff and boom mainsail is used as opposed to the lug rig.



SCOTCH FIFIE—LINES

To face p. 96.

SENIT-, ZULU, HOLOOS

and Macduff, the smack rig came a good deal into favour during the seventies and eighties, but of recent years, curiously enough, the tendency has been to drop this rig in favour of the lugsail.

The fishermen belonging to these villages have, for the greater part of the nineteenth century, regularly fished cod and ling in the Minch from Cape Wrath southwards to Barra Head and Mull; they have also followed the herring fishing at Stornoway and other stations in the Hebrides; and during the last quarter of the century they have regularly prosecuted both the long line and herring fishings among the Orkney and Shetland Islands. In the narrow lochs and sounds of these waters this rig was found very convenient and easy to work. It was a handy rig for 'beating in' lines, and free from the risk to life incident to 'staying' a lugsailed boat. Fishermen also found it much more economical. A smack's sails will, it is said, last longer than a lugger's; and owing to the support given by shrouds or standing rigging, there is much less risk of the mast carrying away. With lugsailed boats such accidents are quite common; and even apart from accidents, the cost of upkeep of masts and spars is very heavy.

Upon a long course, however, and in light winds, the lug rig has been found to be undoubtedly the faster of the two. Owing to the great distances that the Scotch fishermen have lately been going, both to the fishing-grounds off their own coasts and to distant stations such as Yarmouth, Kinsale, and Shetland, and the fact that auction sales have almost entirely superseded the old 'engagement' system, it

has become imperative that fishermen should get as early to market as possible, as first arrivals usually command the best prices. They therefore look now upon speed as a necessity, and not merely an advantage or a matter for pride.

'FIFIE,' RUNNING FREE

Second-hand smack-rigged boats are eagerly bought up by the Shetland fishermen, who have, for many years, kept in touch with the villages where these boats could be got. When none were for sale, their orders for new boats have generally been placed with carpenters in that locality.

These Shetland fishermen have only used big boats in the herring fishery for about a quarter of a century.

Being accustomed to smack-sails in the vessels used at the Faroe and Iceland cod fishing, and having experience of similar sails in trading vessels, they

'FIFIE,' ON A WIND

have taken much more readily to smacks than to luggers.

A good many of these old smack boats are also to be found along the west coast of Ross-shire, in

Loch Broom, Gairloch, etc., where they suit the narrow waters, and can be worked either as fishing or trading vessels, by a much smaller crew than a lugsailed boat requires.

It may be noted that many of the young Highlanders, like the Shetlanders, sail in the merchant service in winter, and go as hired fishermen from the Moray Firth ports in summer. When two or three of them wish to settle down at home, they find it a good plan to bring home a boat, preferably a smack, with them from the east coast.

The 'Skaffie'

From Portsay westwards along the Banff and Moray coasts, and round the eastern seaboard of Ross-shire, until within the last twenty years, the 'Skaffie'[1] or 'Buckie Skaffie,' as it was often known, was universally used in the herring fishing. This boat differed materially from the 'Fifie' model. Both 'stems'[2] were very much raked, and the 'forestem' was generally much curved. The 'Skaffie' was usually broader, with a flatter bottom (though generally deeper keel), and with a consequent bluffness about the bows and quarters. Fishermen found this boat much readier to answer the helm in stays than the old 'Fifie' model, and this was a great advantage when 'beating in' lines, or beating into a narrow bay or channel. The old-fashioned 'Fifie' did not turn

[1] Houldsworth in his *Deep-Sea Fishing*, 1874, mentions these boats under the name 'Scaith.'

[2] It will be noticed that in Scotland, where double-ended, or double-bowed, or sharp-sterned boats, as sailors variously term them, are the rule, the term 'stem' is used to cover both stem and stern posts.

readily when under low sail. Beating into such places as Wick Bay or Stornoway Loch, the 'Skaffie' showed a decided superiority. There was also more deck-room on the 'Skaffie' in proportion to the tonnage of the boat, and this was an advantage at the herring fishing, especially twenty-five years ago, when the boats were much smaller than they are now.

OLD 'SCAITH,' 1874

Advocates of the 'Fifie' model argued that shortness of keel had certain drawbacks as well as advantages, and that a 'Skaffie' when struck on the quarter by a heavy sea would be much more liable to 'broach to' than a 'Fifie'; and that the former boat, from the construction of the bows, would also labour harder in heavy weather. It is said that it was no unusual thing for one or two timbers to be broken through slamming in a head-wind and heavy sea.

In this evenly matched contest of two very distinct types of craft, it may be inferred that neither model possessed any material advantages over the

other, otherwise the fittest would have survived and the other would have been discarded, whereas in fact a compromise has been the result, of which the modern 'Zulu' is the outcome.

The rig of the 'Skaffie' did not differ greatly from that of the 'Fifie.' The most noticeable point of

'SKAFFIE'

difference was a much greater proportionate breadth in the lower half of the foresail. Owing to the shortness of keel, especially at the forefoot, this was required to keep the boat to the wind.

Houldsworth,[1] however, figures a 'scaith' of his day as carrying what was practically a 'main' lug, though

[1] 1874. The dimensions given are 41 feet over all, 13 feet beam, and 4 feet 9 inches depth of hold. The large 'Fifie' of that day was only 34 feet 6 inches over all to 13 feet beam.

slightly smaller than the big forelug, well in the middle of the boat, with a small mizen right aft sheeted to a short boom. This rig seems to have gone out of fashion, the forelug being increased in size, along the foot, and given greater peak, as in all

'SKAFFIE'

the Scotch lugs of the present day, and the 'mainsail' carried further aft, and turned into a large mizen.

It is interesting to note that at that time the mizen even in the 'Fifie' was placed so far amidships as not to need an outrigged boom, and to be termed by Houldsworth a 'main' lug, and he goes so far as

to point out the great advantages to be derived from the mizen as used by English fishermen.

A spar bowline seems to have been used in the 'scaith' to set taut the luff of the sail, called by the Scotch fishermen a 'wand' or 'set.'

The 'Zulu'

William Campbell of Lossiemouth was the first fisherman to attempt to combine the good points of

SEVENTY-FOOT 'ZULU'

the 'Fifie' and the 'Skaffie' models. In the year 1878 he got a boat built named the *Nonesuch*, with the fore stem and bows of a 'Fifie,' and the stern modelled on the lines of a 'Skaffie.' Fishermen at once dubbed the new model 'Zulu,' from our then redoubtable enemies in South Africa. This boat came rapidly into favour with the Moray Firth fishermen, and has entirely superseded the 'Skaffie.' A few of the latter are still to be seen in use at the smaller stations in the

upper part of the Moray Firth, but none have been built for many years.

The 'Zulu' is also to a certain extent supplanting the 'Fifie,' as a few boats of this description are being introduced all along the east coast, even as far south as the Berwick district. The introduction of steering-wheels some fifteen years ago instead of helms or tillers has facilitated this innovation. Fishermen who had not been accustomed to it from their boyhood found great difficulty in 'shipping' a 'Skaffie's' rudder, which in the days when helms were used was always unshipped and taken on board the boat as soon as the nets were 'shot' at night. The worse the weather, the more arduous the job when the rudder had to be 'shipped' into position again after the nets were hauled in the morning. This difficulty has now been removed by the introduction of the wheel and fixed rudder.

The advantages claimed for the 'Zulu' are, that it 'stays' as well as a 'Skaffie,' and will lie as close to the wind and go as easily through a heavy head-sea as a boat of the 'Fifie' build. The deep fore-foot gives greater grip to windward, and prevents that falling off from a head-sea which is often so dangerous. The length of the boat above water, too, admits of a great spread of canvas in light winds, with consequent increase of speed.[1]

It is curious that in the modern 'Zulu' we find the straight fore-foot combined with the raking stern-post and sharp stern which are to be seen in some of the

[1] The largest 'Zulus' run to 61 feet keel and 83 feet over all. When driving hard, a whole fleet of these boats will be logging over 10 knots together.

Brittany luggers in the Bay of Biscay, and which have long been used in the Cornish luggers. The raking of the stern-post has been much increased in some of the latter of late years, just as in modern yachts. It enables the under water-lines of the body to be carried out more finely without resorting to a long counter, and consequently adds to the speed as well as to the turning-power of the boat.

In one respect all the Scotch boats, of whatever build, contrast remarkably with the Cornish, and that is in the relative draught of water at bow and stern. The Cornish boat draws considerably more water aft than forward, and has consequently greater lateral resistance aft, and the centre of lateral resistance being so far back, a proportionately larger mizen and less head-sail become necessary.

The Scotch boat, on the other hand, which has to some extent grown, at all events in the case of the 'Fifie' model of the east coast, out of a deep-bowed boat of coble type, has always retained a relatively deep and powerful fore-foot and bow, and a shallower stern. The result is that the Scotch boat has been more of a one-sail boat, and having the centre of lateral resistance much further forward, the mizen has never played such an important part as in the Cornish lugger.

The Cornish boat when lying on the mud has the appearance of being tilted forward by reason of her deep keel; the Scotch luggers, on the other hand, lie in their tidal harbours on a fairly level keel, and strike the observer by reason of the concentration of power forward. To this and to the large size to which the big

'Fifies' and 'Zulus' now run, we are indebted for what is certainly the most remarkable single sail to be met with upon the seas outside the lateen, namely, the tall Scotch fore-lug. It is truly one of the finest sea sights of modern times to see this great brown pyramid come marching up out of the horizon, and go leaning by you at a ten-knot speed, the peak stabbing the sky as it lurches past some seventy feet above the water. The sense of strain and power is not so produced by any work of man at sea.

The unanimity with which Scotch fishermen as a whole have clung to the pointed stern is remarkable.

About the borders of Aberdeenshire and Banffshire a good many boats have been built with elliptical or counter sterns during the last thirty years or so. They were first built and owned at Pennan village, but they became fairly 'fashionable' at Rosehearty also about a dozen years ago, and there are still a few in the neighbourhood. Like the 'Skaffies' and 'Zulus,' these boats had more deck space in proportion than an ordinary 'Fifie,' and this was at first a far greater advantage than it is now, when all boats are so large. The tendency, however, has lately been to revert back to the 'Fifie' model, the disadvantages of the counter being generally considered by fishermen to outweigh its advantages.

Small Line Boats

Distinctive local types of small line boats are not so clearly marked or territorially limited on the east coast of Scotland as are the larger herring-boats. For inshore fishing, a long-shaped, low-built, open yawl of

from 15 to 25 feet of keel, with lugsail and, in the case of the larger yawls, jib, and occasionally also mainsail or mizen, used to be generally employed. The size of the boat depended a good deal upon the nature of the harbour or creek to which it belonged. On open beaches, where the yawls had to be launched daily, and drawn up again after returning from sea, it was imperative that the boat should be as light as

LONG LINE BALDIE

possible. As a result, the small line yawl used at open creeks such as Cairnbulg and Inverallochy (near Fraserburgh) were low in the wood, of as light material as consistent with safety, and of very light draught of water. They could thus be easily floated off a flat beach, and they required no great quantity of ballast, which of course had to be put in and out daily. The timbers were 'stove-bent,' *i.e.* steamed and then bent into shape. Only the best of wood would stand this process, and much lighter material could be

used than with hewn timbers. In other words, these boats were built largely with a view to being easily pulled, as the small lines were generally worked under oars.

After fishermen had realised the advantages of having decks on herring-boats, they were not slow to apply the same improvement to their smaller boats, and now practically every fishing-boat round the Aberdeenshire coast, of 15 feet keel and upwards, is wholly or partially decked. Hatches are not generally used in boats under about 28 feet keel; but even in these, waterways along the sides have been found most valuable in numerous cases where boats have been struck by sudden squalls which forced lee sides under water, or by heavy seas which but for the deck would otherwise have swamped them.

In such places as Fraserburgh and Peterhead, where there are safe harbours that can be taken at all states of the tide, the winter yawls are much larger, running up to 33 and 35 feet keel. These boats are built more after the model of a herring-boat ('Fifie' build); they are of strong material, full decked and hatched, and heavily ballasted. They have forecabins with sleeping and cooking accommodation for a full crew. They are rigged like the herring-boats, and the lines are worked under sail. Five men generally constitute the crew, both for small line and great line fishings.

These larger boats, from 25 feet keel and upwards, are generally known in Aberdeenshire and southwards as 'Baldies' (or in Fifeshire parlance as 'Bauldies'). The name is a contraction for 'Garibaldi,' and was originally used in full in Aberdeenshire. 'Skiff' is

more generally applied to this boat among the eastern villages of Banffshire.

From the Deveron westwards along the shores of Banff and Moray, and to a great extent also in the Firths of Forth and Tay, fishermen have generally preferred to work small lines in their large herring-boats, as they also work great lines. At Newhaven,

NEWHAVEN BALDIE

however, the 'Baldie' seems to be sufficiently large to answer most of the requirements for fishing in the Firth of Forth, and a good many boats of the same kind are also used among the East of Fife villages, especially during the winter herring-fishing.

At other places on the east coast, for instance Fraserburgh and Peterhead, the tendency of recent years has been to use the large 60-feet herring-boat

for all purposes, including small line fishing. With the increased attention paid to the herring fishing at Yarmouth during the late autumn, and on the Scottish coasts during the early months of the year, many fishermen do not now think it worth while to keep a winter yawl.[1]

'Zulu' Skiffs

Small line boats of the 'Skaffie' model were to be found at most of the Moray Firth ports where 'Skaffies' were employed in the herring fishing, but not in such numbers as to constitute a distinct type of boat. The principal reason, no doubt, was that most of the able-bodied Banff and Moray fishermen preferred to use their big herring-boats for all purposes. But even where, from want of proper harbour accommodation or any other cause, small boats were used, these were often of the 'Fifie' model. Fishermen from as far up the Firth as Tain and Broca have for long been in the habit of getting their small line boats built at Rosehearty, near Fraserburgh.

Since the 'Zulu' was introduced, however, yawls of this model have been coming rapidly into favour, not merely in the home of the 'Skaffie,' but round Aberdeenshire, etc. Fraserburgh fishermen, who used to adhere rigidly to the 'Fifie' model, were among the first to introduce this innovation, and to recognise the suitableness of the 'Zulu' for line fishing.

[1] A winter skiff of the 'Fifie' model, built at Peterhead in 1890 to the order of a Banffshire crew, measured 37 feet keel and 42 feet 6 inches over stems, 15 feet beam, 5 feet deep, and 15 tons register. Price to carpenter, £71, and for sails, etc., £30. This, of course, cannot be taken as the present cost of a similar boat. The boat was clinker-built; a carvel craft would have cost more.

During the last few years a good many large 'Zulu' skiffs have been built at Fraserburgh and other Moray Firth ports, to the order of the Congested Districts Board for Ireland, for use on the north-west coast of that country. They are used both for long line and for herring fishing, and have given entire satisfaction. Crofter fishermen belonging to the Congested Districts of Ireland get these boats from the Board on the loan system.[1] Skilled fishermen from the east coast of Scotland are put in charge as instructors at the Board's expense for a limited period, after which the crews are expected to be able to manage the boats themselves. At great line fishing most of these boats have hitherto worked in Donegal Bay during the first part of the year, and in the autumn they have been mostly employed in Downings Bay (Sheep Haven) at the herring fishing.

Shetland Line Boats

Among the Shetland Islands small boats of the Norwegian model are everywhere used, both for inshore fishing and for ferrying across sounds and firths; and, until the last quarter of the century, larger boats of the same build were alone used in the long line and the herring fisheries.

The small line boats run from 10 feet of keel upwards, some of the larger haddock boats measuring about 12 feet keel. 'Sexerns' (or six-oared boats) run from 20 to 23 feet. All these boats, however, are much larger

[1] These 'Zulu' skiffs that have been taken to Ireland run about 30 feet keel and 42 feet over stems; 12½ feet beam, 5 feet deep inside, and 10 tons register, and are mostly carvel-built. There is, of course, cabin accommodation for a full crew. Cost for carpenter work, £100; and for sail and outfit, £35;—total, £135. Material is much dearer now than a few years ago.

than appears from these figures, as both 'stems' are greatly raked. They are also high at the bows and quarters, which helps to keep them dry in a seaway. They are built of light materials, and have very few timbers. Being so light in the frame, they are buoyant and lively, and under skilful handling will come through a good deal of rough weather. They must, however, be kept end on to a heavy sea; their low waist makes them dangerous in a broadside sea. Where a large herring-boat or a cod smack would be 'laid to' under low sail, Shetland fishermen would consider it safer to keep a 'sexern' under oars, heading straight

DUNDEE WHALEBOAT

through the sea. At least one case is on record of a Shetland crew being thus driven to Norway in a six-oared boat, and after they had been given up for lost, they returned home in safety. More remarkable still was the case of two girls from Unst who were blown out to sea when trying to cross a sound with a small boat loaded with peats. They, too, managed to keep their frail craft afloat till they reached Norway. One was eventually sent home; the other accepted an offer of marriage from a young Norwegian, and remained.

The Shetland 'sexern' is not unlike an ordinary lifeboat in appearance, or the Dundee whaler, and is a survival of the model of the old Norse Viking long-ship. A good many of these boats are still used in

the long line fishing at what are locally known as 'haaf' stations, but they are being fast supplanted by large herring-boats from Aberdeenshire. These 'haaf' stations are harbours within easy reach of the deep-sea fishing banks, and generally situated near some outlying point.

The local Shetland rig was a square-shaped lugsail, of undoubted Norse origin, a grand sail for running free. This is to a great extent being abandoned in favour of a lug and jib similar to that used in the

SHETLAND SEXERN

Firth of Clyde, the tack of the lug being fixed at the mast. Beating up through narrow channels in cold, wintry weather, fishermen find the latter rig a great advantage, as they have merely to shift the sheets instead of dipping or lowering the sail every tack.[1]

Norway-built boats used to be imported regularly into Shetland, especially the smaller sizes. To save

[1] The smaller boats are built for about 10s. a foot of keel; so with sail complete a 12-foot boat would not cost much more than £7.

A 'sexern' of 21 feet keel would cost at present £21 for hull and spars; or with sails and rigging, not more than £30. A 'sexern' of 23 feet keel, being fuller built and higher in the wood, would cost about £40 for hull, sails, rigging, and outfit. Very few 'sexerns' are now being built, and there is a probability that this type of boat may become obsolete.

space in the vessels, they were usually brought across in sections, and put together after they were landed. Ready-made oars were also imported in considerable quantities. Small boats are still occasionally brought over, along with cargoes of timber. As already remarked in a former chapter, these boats are generally built with only three broad planks, whereas a similar boat built in Shetland would have twice as many. As a consequence, these Norwegian boats are very sharp in the build, and have not sufficient bearing to give them stability under sail, or to carry weight. They are easily pulled, however, and in fine weather are smart enough little boats, but they require very careful handling.

For the cod fishing, with hand lines, at Faroe, Rockall, and Iceland, large deep-sea smacks are used. They are from fifty to ninety tons register, carry from twelve to sixteen hands, and are in all respects similar to the Grimsby fishing smacks, which are dandy or ketch rigged. In fact, the Shetland vessels are generally bought second-hand from that port.

The inhabitants of the Orkney Islands, though favourably situated, have not given the same attention to the fishing as the Shetlanders have done. The explanation probably is that the land is better in Orkney than in Shetland, and it is much easier to make a living ashore. The Shetland crofter could not, as a rule, make a living off his land; hence the unanimity with which the young men take to a seafaring life.

The only type of boat in Orkney that appears to merit special notice is a small boat used for crossing the sounds and for inshore fishing. The model is quite distinct from the Shetland or Norwegian boat,

being very broad in proportion, and consequently very steady under sail. The frame, too, is much stronger than that of the Shetland boat. The sprit rig is generally preferred with two masts and sails, and this was at one time a great favourite not only in Scottish waters, but in those of the Humber, the Mersey, and the Lincolnshire Fens.[1] This rig was very common for small open craft during the early part of the nineteenth century. The standing lug has also been used in

ORKNEY SKIFF

the combination of main and fore masts, a light boom being fitted to the mainsail. Competent judges assert that the most skilful boatmen they have seen for handling small boats under sail are the men that have ferried them across the Pentland Firth and the sounds among the Orkney Islands. Fifteen feet of keel may be taken as the average length of this class of small boat.

Orkney herring-boats, as already stated, are of the 'Fifie' model, and either lug or smack rigged. Large

[1] See pp. 133, 134, 230.

smacks used to be sent to the Faroe and Iceland fishing, but none have been owned in Orkney recently, though English smacks and Aberdeen trawlers occasionally land their fish in Orkney.

Firth of Clyde Skiffs

The favourite boat in the outer part of the Firth of Clyde and Loch Fyne is a skiff known as the

WEST COAST 'NABBY'

'Nabby,' one of the prettiest, smartest, and handiest forms of sea boat to be found.

For herring and great line fishings, these boats run from 24 to 28 feet of keel; but as the stern-post is a good deal raked, the length over all is usually from 32 to 34 feet. The boat is open, with the exception of a small fore-deck, which gives rather limited cabin accommodation to the crew of three or four men.

The build may be either clinker or carvel. One very noticeable feature about the model of this boat is the great disproportion between the draught of water forward and aft. A 'Nabby' draws from 1 to 2 feet forward, and from $3\frac{1}{2}$ to 6 feet aft. The rig is a lug and jib, and occasionally a mizen is carried in summer. The sails do not require to be shifted in

WEST COAST SKIFF, WITH MIZEN

'staying,' as the tack is fixed at the mast, which is supported by single stays.[1]

The 'Nabby' bears some resemblance to the Cornish model, and more still to the 'Zulu' of the east coast, only there is less rake on the 'Nabby's' stern-post, and much more rake on its mast. The 'Nabby' build

[1] A good carvel-built 'Nabby' of, say, 27 feet keel, would cost at least £100 from the carpenter; and sails and other outfit would bring the price up to £120 or £130.

The planking used is yellow pine (recently Oregon pine has been introduced), whereas on the east coast of Scotland larch planks are alone used in boat-building.

and rig combine to make a very smart, manageable boat. Four men can work 'great lines' with this boat as long as it is safe to remain at sea. Four men also constitute a boat's crew for herring. Seine trawling-boats, however, work in pairs at this fishing. For drift-net fishing three men are a sufficient crew.

LOCH FYNE SKIFF

It is interesting to compare these figures with the crew required by an east coast boat of similar size. No such boat would be worked at line fishing on the east coast by less than five, and sometimes six, of a crew, and the requirements for herring fishing would be similarly disproportionate. Thus the earnings of

the 'Nabby' fall to be divided into fewer shares than the east coast boats.

It is of interest to note that the fishermen of Dunure village, near Ayr, have taken to building their own boats. During recent years several finely modelled skiffs of about 25 feet keel have been added to the local fleet, all these boats having been built and fitted out by their owners with the occasional help of their neighbours.

At Dunure and Maidens many of the fishermen prefer square-sterned skiffs, both for herring, great line, and small line fishings.[1]

These boats, as is generally the case inside Turnberry Point, are narrower, lower in the wood, and generally finer in the model than the skiffs in use about Girvan, Campbeltown, and Tarbert on Loch Fyne. The reason is obvious. Girvan fishermen work their long lines in the entrance to the Firth, and out halfway across the Channel, in winter and early spring, and this can only be done with an able, comfortable boat. With suitable tides it is quite a common thing to get from twenty to forty cwt. of fish at a single haul in the Channel, and with this weight a small-sized 'Nabby' would be left with too little freeboard in rough weather. The Campbeltown fishermen, again, work most at herring seine trawling; some of them do nothing else all the year round. This is a mode of fishing with more than the usual elements of uncertainty; a crew may go for weeks and earn nothing, or they may fill several pairs of

[1] The dimensions are—(1) Length of keel, 25 feet; breadth of beam, 9 feet 4 inches; and depth, 5 feet 7 inches; (2) length of keel, 27 feet; breadth, 9 feet 4 inches; and depth, 5 feet 6 inches.

skiffs with one haul of their net. It thus becomes a matter of the first importance that their own pair of 'Nabbies' shall be able to carry full share of the herrings they have been fortunate enough to catch, so the tendency is to increase the size and carrying capacity of these so-called trawling skiffs.

The Dunure fishermen use their skiffs most at the summer drift-net fishing. As they are a few miles from the nearest railway station, the question of catching the market train is always a burning one; hence speed in light weather is the first requisite there, and large sails are the rule.[1]

The larger 'Nabby' as now modelled is of comparatively recent date: fishermen say its introduction only dates back twenty-five or thirty years. Before that time, small smacks, with broad square sterns and pretty large draught of water aft, not unlike the present Fleetwood and Maryport shrimpers, were mostly employed in the herring fishing in Loch Fyne, and also in the other lochs up the west coast, as, for instance, in Gairloch and Loch Broom.

In the Clyde these smacks have been gradually discarded in favour of the 'Nabby' for several reasons. Their rigging, boom, gaff, etc., was found to be cumbrous at herring fishing in so small a vessel; while in heavy weather the gaff, sagging over the lee side, causes the craft to labour harder than the lugsail yard does. The 'Nabby,' therefore, appears to be an

[1] For a 'Nabby' of 24 or 25 feet keel the following would be a fair average:—Luff (or weather rope), from 22 to 23 feet; leach, about 28 or 29 feet; and sole (or foot), from 20 to 22 feet.

The large jib contains about 28 yards of cotton, 28 inches broad. The mast is generally the same length as the boat is over 'stems.'

evolution from the smack rig and from the old small line boats used in this Firth, retaining the best points in the rig and model of each.

This is another interesting instance of the supplanting of the smack rig by the lugsail; of a return to a rig which, as elsewhere remarked, is among the oldest in the world, and is at the same time among the most difficult to cut, set, and handle with real efficiency.

CLYDE SKIFF

The small line boats on the Ayrshire coast are long, low, narrow skiffs, with lug and jib. There is no great disparity between the draught of water aft and forward, hence the boat lacks the 'Nabby's' stability under sail, but 'pulls' well.[1]

[1] Ordinary dimensions are :—Length of keel, 20 feet, and length over all 22 to 23 feet; breadth of beam, 5½ feet, and depth, 2½ feet. Price to carpenter, about £12 or £13 ; and sails, lug and two jibs, about £2 more.

Boats used in the gill net-fishing for cod and saithe in spring, and in

Ballantrae, Stranraer, and Portpatrick

Proceeding outwards towards the channels, we find some differences in the models of boats. At Ballantrae, for instance, the larger 'Nabbies' cannot be introduced because there is no proper harbour, and the fishermen have to launch and beach their boats daily. A skiff of about 22 feet keel, therefore (a cod-net boat, in fact), has to do duty at all branches of the cod and herring fishings. Small lines are very little used at Ballantrae; and for lobster fishing, as elsewhere, a much smaller boat is kept.

Portpatrick fishermen hardly engage in the herring fishing at all, their principal occupation being long line fishing for cod during the winter and spring, and a few months at small line fishing in summer. Working out into the channel, where the tides are very strong, they have to encounter a very dangerous, choppy sea. It is very noticeable that surroundings and conditions similar to those in the Pentland Firth appear to have evolved a boat almost identical with that used among the Orkney Islands and on the Caithness coast, and

the turbot net-fishing in summer, are a little larger every way. An average size:—Length of keel, 22 feet, and over all 25 feet; breadth of beam, 7 feet, and depth inside, 3 feet. A boat of this size would cost about £20 from the builder, and sails and other outfit would amount to about £30 more.

These smaller boats are all clinker-built, and they have no decks.

A special size of boat is required for the cod and turbot nets, because the 'Nabby' would be too heavy for the strength of the net, and the line skiff would be too small to stow the nets comfortably. Occasionally in summer small line boats are used for turbot net-fishing. Turbot nets are set in 'trains' of ten to fifteen along the bottom, on which they rest. Cork floats buoy the upper rope upwards for about a yard. As herring drift-net fishing is usually going on in the vicinity, no buoys are used, and the fishermen consequently have to keep careful landmarks, and 'grapple' for their turbot nets daily.

altogether different from any line-boat inside the Firth of Clyde.

The principal feature of this model is, of course, its great proportionate breadth of beam; the bows and quarters are also full. The rig consists of two lugsails, like that of the Pentland Firth boats, which also carry two sails, though often spritsails.[1]

Some of the older Stranraer yawls are similar in model to the Portpatrick boats, but the last additions

PORTPATRICK LINE BOAT

to the fleet have, curiously enough, and by some process of evolution which it is difficult to explain, been exact miniatures of the Moray Firth 'Zulu.' The rig is the usual Firth of Clyde rig, a lugsail and jib, with the mast much raked.[2]

These Stranraer 'Zulus' (I do not think this name is used there, however) retain the 'Nabby's' short fore-

[1] The dimensions of the boats in the accompanying sketch are:—16 feet keel, 7 feet beam, and 2½ feet deep inside. The 'shell' costs £10, with £4 additional for sails, spars, and oars.

[2] One of these boats measured 16 to 17 feet keel, 21 feet over stems, 6 feet beam, 2½ feet inside, and 2 tons register.

foot and long heel, but above water they are perfect miniatures of the east coast 'Zulu.'

A number of luggers of the Manx build and rig used to be owned at Campbeltown and other ports on the west of Scotland. They were used at the Irish mackerel and herring fishings in spring and early summer, and then at the east coast herring fishing in July and August. Very few are now owned in these waters, fishermen having found the 'Nabbies' more profitable.

Annan Trawling Smacks[1]

The principal fishing in the upper Solway is trawling—for flounders in winter, and for shrimps and prawns in spring and summer. A neat little smack is used, the only craft of its kind in Scotland, so far as I am aware. With the exception of a narrow open hatchway with very high 'commons,' these boats are full-decked. The decks and high 'commons' are necessary by reason of the dangerous sea that rises in the Solway with high winds and strong tides. The average draught of water is from three to four feet aft.

Two men form a crew for winter fishing, but at the shrimp fishing, where the net is lighter and weather better, the skipper often works alone, or with the help of a boy.

The Annan fishermen mostly make their own sails, as they also make their own trawl-nets.

The first trawl fishermen came to Annan from

[1] The average size is 23 feet keel, and 30 feet over all; 9 to 9½ feet beam; 4 feet deep inside; and 5 tons register. The average draught of water is from 3½ to 4 feet aft; the average draught forward about 2 feet. Cost, about £45 to the carpenter, or with sails and rigging complete, about £80.

Morecambe Bay some fifty years ago, and they introduced these trawl-boats; but both model and rig have been greatly improved since. Most of these smacks are now carvel-built.

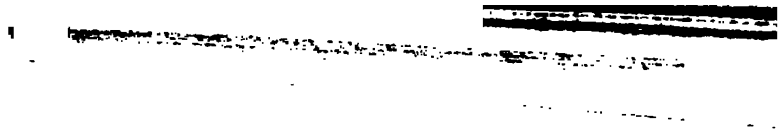
Stornoway Yawls

The boats in which Lewis men worked long lines eighteen or twenty years ago have been a good deal superseded by 'Fifies' and 'Zulus,' but a few are still in use, though probably doomed to extinction.

This Lewis boat had a resemblance to the Pentland Firth yawl, but was much larger, say 20 to 25 feet keel, and 5 or 6 feet longer over stems, and broad in the beam and quarters, both stems, especially the stern-post, being raked. The sails used were broad, low lugs. Five or six men formed the crew, and oars were a good deal used when working lined. East coast fishermen used to speak contemptuously of them as 'pikers.' They were quite open, and clinker-built.

WHERRY

To face p. 126.



CHAPTER VI

EAST COAST AND THAMES ESTUARY

YORKSHIRE, to its credit be it said, has claims to distinction for other things than ecclesiastical architecture,

BILLYBOY

or even hams and fox-hunting. He that useth the dingy North Sea hath knowledge of Yorkshire's billyboys, its cobles and its keels, all distinctive types of sea-craft well suited to their work.

The Billyboy

The billyboy is generally a flat-bottomed, round-ended craft, whose Dutch descent is scarcely veiled by its paint. Rigged as a sloop, or more often as a ketch or dandy, it carries leeboards, the masts are

stepped in tabernacles, and even in these days square rig on the mainmast is often retained for

BILLYBOY

winds. With its clinker build, its rounded ends

OLD GOOLE LEEBOARD SMACK OR BILLYBOY, 1835

fitted to the locks of the Fens, its high sheer for aft, and its snub-nosed bowsprit, it may be see

up and down the English coasts, as well as far inland up the Ouse or in the Trent, with its masts and rigging comfortably housed on deck. It is a handy, seaworthy type of flat-bottom cargo-carrier, well suited to its work about our great eastern estuaries, and not lacking in old-fashioned picturesqueness. In these days of grimy utilitarianism it often lacks the pretty conceits of ornament still adhered to by the more artistic Dutchman, or by its southern neighbour the Thames barge, both of which still love to flaunt their cheerful green and gold rails across the dull brown waters which they navigate. But, like them, it is generally handled with ease and skill by the skipper, his missus, and the family, with no other crew than the deck-hand in the shape of a curly-haired retriever.

The Coble

The glory of the *coble* Yorkshire shares with Durham and Northumberland.

The 'coble' is one of the most distinctive types of craft to be found perhaps in Europe or Asia. She was primarily designed for launching off beaches against heavy seas, and admirably she has met this principal requirement. With a high-shouldered bow, with deep grip, she carries a flat floor aft to her low stern, beneath which two 'skorvels,' or shallow bilge-keels, help to keep her upright and to launch her down the beach. A long, deep, dagger-like rudder, drawing three feet or more, is shipped as soon as the boat is in deep water. The deep forefoot is useful in coming head-first off the shore into a breaking sea, being a help in keeping the head of the boat up to

windward if the wind is on one bow; and in beating to windward, drawing as it does from two to three feet, it gives her a powerful grip which, added to the hold given by the deep rudder, enables a coble to be a very fine performer on a wind, especially in a sea-way.

The square-sterned boats are the best performers on this point of sailing, but round sterns are coming

MULE

into vogue on account of their superior running power, the square-sterned boats being very difficult to handle running before a heavy sea. As cobles also generally pull and tow best stern first, the round stern has obvious advantages for the fishermen and the pilot. The southern boats have most of them been built in this manner, and with the hollow bow at the water-line. The lean, flat stern is in strong contrast to the powerful appearance of the rest of the hull, and on

the whole, therefore, the increasing fashion for round sterns is perhaps a gain from the artistic point of view, for it certainly makes a less insignificant finish to the boat.

They are clinker-built, with broad sawn timbers of oak or larch, which give them a curious angular section; there is a pronounced tumble-home of the topsides, and the planking is finished flush with the

COBLE—REEFED

stem. The gunwale is worked outside instead of inside the top strake, and the thowl-pins and pins for belaying halyards, etc., project on the under side. With these characteristics, and the broad bands of light colours with which they are daringly painted showing up their bold outlines, these boats are beautiful creatures to meet at sea alive with wind and motion.

Their rig is the simple old brown-tanned dipping lugsail, set on a raking mast. A small jib is often used in fair weather, and the racing cobles at Whit-

burn go in for a mizen also. But this sail is of little use upon a wind, except to balance an extra large jib, and is therefore not in general use. The mast is given greater rake for every reef taken in the mainsail; and with a reef breeze, and her mast raked from 8 to 10 feet, the coble will lift over anything in the shape of a head-sea, and stand almost any weather if kept by the

A HERRING MULE

wind. At such times the short mast is set, and the coble is seen to her best advantage; she is sailed by the sheet, and never luffs to the stiffest puffs.

The coble seems to have followed the fate of nearly all the most distinctive types of boats in its increase of size. The *Sailor's Word-Book*[1] gives the general size of the coble as 20 feet long by 5 feet beam, and other old writers speak of it as a 'small boat.' Yet the coble of to-day is usually ten to a dozen feet

[1] By Admiral W. H. Smyth, published 1867.

longer than this, and from 7 to 10 feet beam—a size not exceeded by many sea-going open boats.[1]

While the bilge keels and tumble-home of the top strake of the coble are very suggestive of Dutch origin, there are certain points in which this boat seems to retain some relics of distinctly Norse influence. The simple form of the pins set under the gunwale for belaying halyards to, the flat shape of the loom of the

HUMBER GOLD-DUSTER

oar and its method of shipping with an iron ring set over a single thowl, as well as the flat head and low peak of the sail, and the light shades of green and blue

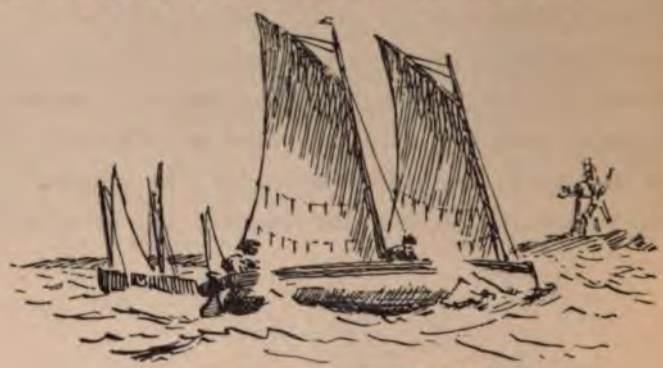
[1] Dimensions of cobles:—

	COD, LING, AND HADDOCK FISHERY.	HERRING FISHERY.	WHITBURN COBLE.
	Six lines, 2 miles in length.	Carrying 30 nets, 180 feet by 3 feet.	
	3 tons capacity.	9 tons capacity.	
Length	28 feet	33·75 feet	31 feet
Beam	5·5 ,,	10 ,,	7 ,,
Depth	2·3 ,,	4·75 ,,	2·5 ,,

Crew—3 or 4 men.

The length of mainmast is generally about a foot shorter than the over-all length, and that of the mainyard roughly half that of the mast.

used in painting the hulls, all flavour of what one meets to-day on the Scandinavian seaboard.



OLD TRENT AND HUMBER BOATS, 1835

The Keel[1]

This name is now applied in Durham and Yorkshire to a class of flat-bottomed barge navigating our north-eastern rivers. The Norse origin of the simple square rig in vogue is obvious to all who have seen the old-fashioned Norwegian coaster or the Nordland boat, running or beating among the northern islands. The tall light mast carries a simple squaresail. The main halyards tie is of chain, and leads through a sheave below the main rigging, and aft to a purchase worked by a small hand-winch in front of the helmsman. In fine weather a small square topsail is carried, hoisting to a sheave in the masthead. A pair of shrouds on each side, and a strong forestay, form the only standing

[1] 'An old British name for long vessels, formerly written *ceol* and *cynlis*. Verstegan informs us that the Saxons came over in three large ships, styled by themselves Keeles.'—Admiral W. H. Smyth.

Swiz. *ceol* = barge or small vessel.
Iceld. *kjoll* = barge or ship.
Dan. } *kiel* = vessel.
Swed. }

The term is known for the square-rigged barge from Norfolk to the Tyne.

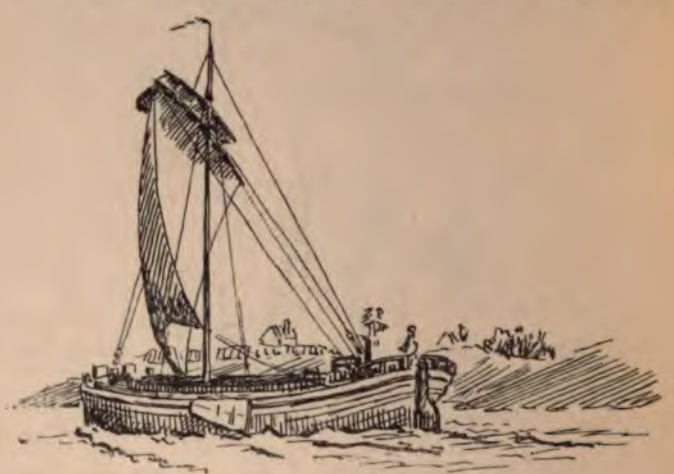
rigging; by means of the latter and the windlass the mast can be quickly lowered and raised again, all standing in shooting bridges.

The keelmen agree that the square rig is the simplest and handiest for its purpose, and is preferable to a fore-and-aft rig for inland navigation. Its main disadvantages are felt when tacking. For this the two hands forming the crew must be on deck. As soon as

HUMBER KEEL

the ship is round, and the sail well aback to pay her off, the sheet and tack are let fly, the lee sheet and weather tack rope are quickly hauled in as the sail swings through blocks on the gunwale which lead to small hand-winches stepped for the purpose on each side of the long main hatchway at the fore and aft ends of the vessel. The tack is hauled down taut, while the sheet is trimmed to the wind; this often cants the yard until it looks like a square-headed lugsail. The lee and weather braces are in one piece, the bight

being overhauled by the helmsman to brace round the lee yardarm. In going to windward the weather leech is often tautened by a bowline leading forward, and the keelmen claim that when on a wind they can look a point closer than any fore-and-aft rigged vessel; and any one who has seen them beating down the Humber in a strong easterly wind, will agree that on the whole they have good reason to be proud of the set of their sails. In a strong wind, however, staying



KEEL

these boats is no child's-play, as the powerful sail is all adrift when being swung and takes charge freely, while before the sail is reset and trimmed the boat has often made three lengths of sternway. The bow and quarter rails are very reminiscent of Dutch scenery, though an inartistic blue seems to be coming into favour in preference to the older and prettier bright green with red and gold touches here and there.

For inland navigation the leeboards, anchors, and dinghy are left behind, and ultimately the mast; yards

are stowed on deck, sails below, and the very winches unshipped to enable them to pass beneath the low inland bridges; and thus denuded these boats may be met with at Leeds or Liverpool, or in the heart of Lincolnshire.

They look big and safe enough in these quiet inland waters, but seen off Grimsby from the bridge of a steamer in a big north-easterly swell and a strong breeze, their freeboard seems none too much.[1]

The keel is undoubtedly the finest inland naviga-

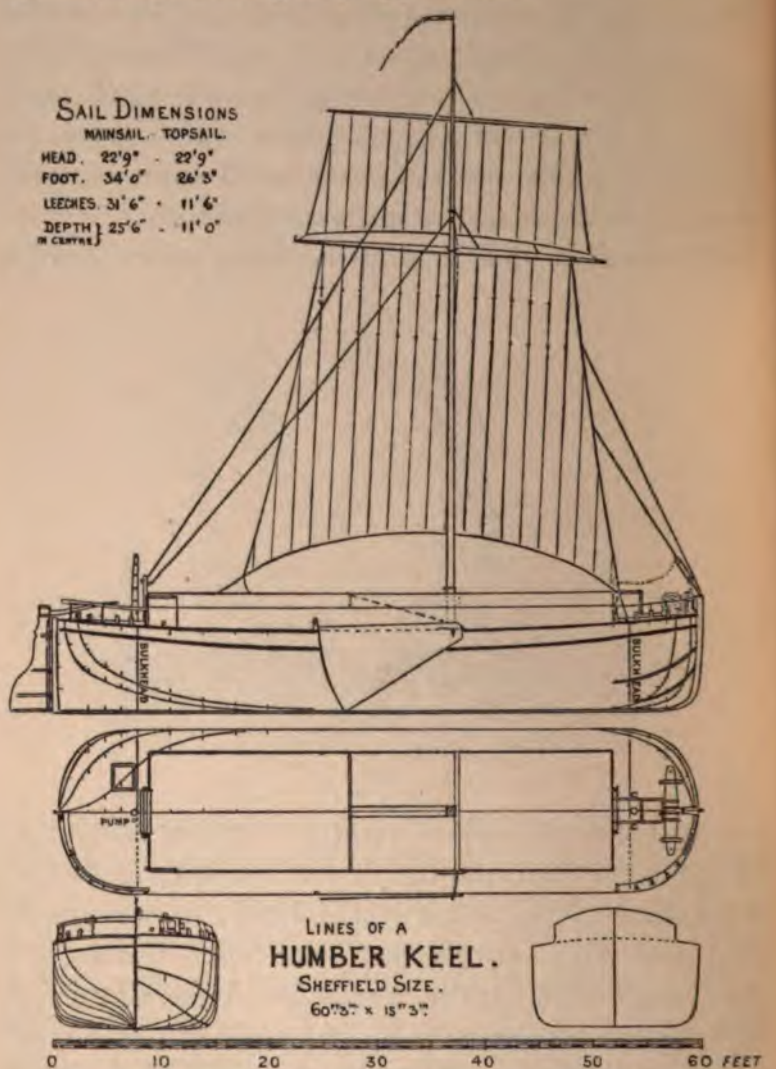
KEEL

tion boat we have in this country. Inland navigation, except in the Fen counties, is not nearly so developed in England as it is on the great inland waterways of the Continent, and naturally so. But while making due allowance for the smaller size of our rivers and canals, the ordinary canal-boat is a sorry piece of naval architecture at the best, and the keel is a refreshing change.

The barges used in the Mersey are, it may be

[1] The usual dimensions are about 58 feet by 14 feet 6 inches by 5 to 6 feet draught when loaded, and they carry from 70 to 80 tons of cargo.

noted, practically keels in all but their fore-and-aft rig, and their more grimy appearance.



(BY KIND PERMISSION OF THE HUMBER YAWL CLUB)

The coal-carrying keel on the Tyne, of which comparatively few survive, has quite forsaken its old square rig in favour of the fore-and-aft sprit main and stay-

sails. In fact, the Tyne keel of the present day is much more like the Mersey barge both in appearance and rig than its sister of the Humber.

It is interesting, historically, that at the beginning of the last century it was among the Teignmouth keels that centre-boards were first given a trial, about the time that the Admiralty were making experiments with the *Lady Nelson* sixty ton brig; but the centre-board does not appear to have taken on. Owing to the

MERSEY LIGHTER

narrower waters they navigate, these boats were always a much smaller class of vessel than the Humber keel now is. Their dimensions were about: length, 42 feet; beam, 19 feet; draught, 4 feet 6 inches; capacity, 21 tons.[1] It is said that about the forties in the last century, carvel build gave way to clinker building, whence the smaller Tyne wherry. As a rule, development is in the reverse direction, and classes of boats in these isles

[1] The dimensions are from *Notes and Queries* for Jan. 26, 1901, which gives other interesting particulars.

increasing in size, are apt to leave the clinker for the carvel style of build.

First-cousin to the keel of the north-east coast is the ordinary humble lighter, barge, or flat, variously called, more variously rigged, but invariably grimy, hard-working, and of little repute.

Yet despise it not, for in that low freeboard, square-ended little craft, life, real life, is to be met with.

THE HUMBLE LIGHTER

Navigating over wide, stormy estuaries, east, west, and north, in dripping fog-bank and howling gale, in glaring sun and black night, without shelter or help, and but a little simple rope and canvas, two men, or a man and boy, carry thousands of tons of this country's merchandise, year in, year out, with unfailing regularity and certainty. In simplicity and efficiency they are not excelled.

The Norfolk Coast

Coming southward along the east coast we may pass by the Humber, with Hull and Grimsby, the great

northern trawling ports, in these days full of iron steam-trawlers, across the entrance to the intricate channels of the Wash, to the twin ports of Lowestoft and Yarmouth. With the decay of Harwich as a fishing-station during the last century, these two ports, favoured by their situation well out in the North Sea and near to the trawling-grounds then beginning to be systematically worked, have become the home of the

OLD CUTTER, 1818 (AFTER W. DANIELL)

largest sailing-fleet of trawlers and drift-net boats in our islands. At the beginning of the century deep-sea trawling was in its infancy, and before the advent of railways no fisherman went farther from his market than he could avoid. Simultaneously with the increased sea traffic in our estuaries steam came in, and while it helped to scare the fish out from many portions of the shoreline, it enabled the fisherman to go farther afield and to use the port nearest to his fishing-ground rather than that nearest to his market. Although Lowestoft and Yarmouth, therefore, are

ancient ports, their importance as fishing-stations is of recent origin.

Brought up among the drift-net fishermen of the west country, one was educated to look upon 'east countrymen,' as the Lowestoft and Yarmouth boats were known, as sacrilegious Sunday-breakers and outer barbarians generally, and we used to criticise them from our small boat much as the small-line man does

OLD YARMOUTH YAWL

the trawler, the pedestrian the cyclist, or the teamster the scorching motor. Consequently, when one first moored up alongside their long wharves, it was with some surprise one began to find the Lowestofters much as other sailor men, and East Anglia not only a delightful country, but one from which several remarkable types of naval architecture have emanated—a fact which argued even to our prejudiced west country mind a high state of civilisation. In fact, to give the Norfolk coast its due, there are few coastlines of equal length which have done more in this direction.

The far-famed old Yarmouth yawls are unique, and with the exception of some tropical-built canoes, are probably the largest open boats in the world. They are long, narrow, clinker-built boats, stem and stern alike, with very fine entrance and clean run, and are often 50 feet in length with 10 to 11 feet beam. The older boats often exceeded 50 feet in length, the *Reindeer*, which challenged the *America*, being stated to

ARMED LUGGER, 1825

have been 69 feet and to have sailed sixteen knots on a reach. These boats were rigged with three lugsails and jib. This three-masted lugsail was a very favourite one at the beginning of the nineteenth century among sailors on both sides of the Channel. It appears to have emanated from the Breton coast, and at a time when the French fleets were beaten off the seas by the British, these gallant sailors were able to carry on very harassing warfare with their three-masted armed luggers. The old bluff-bowed king's

cutter on this side of the Channel was no match in speed for these easy-lined French luggers, as the flourishing smuggling trade abundantly proved at an even much later date, and the bellying cut of the fore-and-aft sail of that day made it impossible for our armed cutters to compete with the lug-rigged vessels

KING'S CUTTER, 1825 (FROM A SKETCH BY SIR W. WARRINGTON SMYTH)

from across the Channel in weatherly work. Hence it came about that our own navy adopted the rig for certain classes of small craft, and it was also used in vessels of from 50 to 60 tons both at Whitby and Yarmouth. It was so sufficiently a national rig in the middle of the century that, in Folkhard's first edition of *The Sailing-Boat*, this rig was given as being characteristic not only of the Yarmouth beach-yawl, but also of the Hastings boats. It is interest-

ing, therefore, to note that in both cases the three-masted lug rig very soon gave way to the present form of main (dipping) lug and mizen (standing) lug, which (with the addition often of a running bowsprit and small jib) may be regarded as the most

SERVICE 23-FEET CUTTER

typical rig of the British fisherman. Even the long, sharp-lined beach-yawl has discarded the old mainmast, enlarged the dipping-lug foresail, and brought the mizen well inboard, increasing its area to about two-thirds that of the foresail. The existing rig to-day, therefore, is, notwithstanding the far greater length of the beach-yawl, identical with that used for the service cutters

in the navy, a fact which goes far to prove the contention of some of my naval friends that this rig is the handiest and most powerful which can be put into an open boat with a strong crew on board, the latter being a very essential condition to its success.

In the meantime, on the south side of the Channel, the French have loyally adhered to what may be regarded as the national small-boat rig, and the three masts with bowsprit and maintopsail may be very generally seen to this day anywhere west of Nieuport

LOWESTOFT BEACH-YAWL

and Blankenburg, alike in trawlers, traders, and men-of-war service-boats.

The great length, fine lines, and shallow draught of the Norfolk beach-yawl would seem to indicate a very fast and capable smooth-water vessel, and it is nothing less than marvellous that these boats should be such magnificent vessels in the very heavy weather which is the rule when their crews put to sea. Yet they are in reality designed and used almost entirely for bad weather, their business in life being the succouring of men and ships when no other craft but the splendid sailing lifeboats of the National Lifeboat Institution

an put to sea. Such work in the largest and most owerful of the Institution's modern lifeboats is dangerus enough, but in a big open boat such as the beach-awl, in the confused and dangerous sea which runs in eavy weather along the banks off the Norfolk coast, t calls for greater nerve and smarter handling than any alt-water job known to seamen.

Before the days of the National Lifeboat Institution, the whole of the life and property-saving work on

OLD SMACK, 1820 (AFTER W. DANIELL)

the coast was carried on by the beachmen's companies either in the big sailing yawls or in the smaller gigs. There are now only some half-dozen of these companies left along the Norfolk coast, but they still do their fair share of salving notwithstanding the rivalry of the Institution's fine sailing lifeboats and of the powerful modern steam-tugs, which also show no reluctance to venture in among the banks if a ship is in distress and there is enough water for them.

While the gigs belonging to the companies pull from eight to ten oars, the yawls carry crews of between twelve and twenty men, a big crew being necessary both in launching these big boats through the heavy surf, and in handling sail, bailing, and bearing assistance on board distressed vessels. Nothing is more common than for small coasting-schooners, ketches and the like, to get into trouble for sheer want of hands

EAST COAST DEEP-SEA TRAWLER

and weight of bone sufficient to cope with emergencies in a hard wind, and a few strong Norfolk hands out of a plunging beach-yawl have time and again saved crew, ship, and cargo.

Of the fishing-fleets sailing out of Yarmouth and Lowestoft, the drift-net boats are probably the more interesting from the present point of view. While the trawlers, fine, powerful, sea-keeping craft, of from 60 to 90 tons, have developed out of the category of boats and have all adopted, with wonderful unanimity, the handy North Sea ketch rig in common with their

sisters from Grimsby and Ramsgate, the smaller 'driving' boats have had a history and have evolved a rig quite their own.

The deep-sea trawlers from these ports are among the finest productions of any fishing industry in the world, but are beginning to give way to the steel steam-trawler which was the production of the last sixteen

OLD YARMOUTH LUGGER, 1874

years of the last century. But the old sailing smacksmen of the North Sea will not be forgotten, even when everything carrying a trawl is under steam, by any one who has seen their fleets and sailed with them. They have set fashions even in the yachting world: the ketch rig is common among yachtsmen now, and even the old habit of carrying a jib-headed topsail over a reefed mainsail, which I can remember hearing stigmatised as 'only a smacksman's dodge,' is now

perpetuated with regularity in the smartest of the Y.R.A. classes in a blow.

Although a few steam-drifters are now coming in, sails will probably long continue to hold their own in this fishery.

Houldsworth, in his *Deep-Sea Fishing*, 1874, gives several cuts showing the Yarmouth drift-net boat of that day, from which it is evident that, with a few

SPLIT LUG

slight differences, these boats were practically identical in rig with the present Brighton and Hastings luggers. The Norfolk boats, however, have had the advantage of deep-water havens, and have therefore steadily increased in size, while the southern boats are handicapped by the necessity of beaching in the absence of anything in the way of a protected harbour, and have consequently had to be kept down in size.

There is no doubt that one of the contributory

causes to the alteration in rig which has taken place in the Norfolk drift-boats since the seventies, is the Norfolk practice of taking to sea for the season a number of unskilled hands from the shore. These men form

LOWESTOFT DRIFT-NET BOAT

the majority of each crew, and are taken mainly for the purpose of handling the nets.

The other principal cause has been the increase in the size of the boats themselves. The disadvantages of the big dipping lugsail become more and more apparent as the size increases, and the danger attending the handling of this sail in strong winds and high seas becomes infinitely increased when it has to be done by an inexperienced crew, or by a short-handed one.

The configuration of the banks off the Norfolk coast also makes a long series of short tacks often necessary, and the fore-and-aft rig, with its quickness and handiness in going about, has advantages on such a coast not to be disregarded.

The result has been that the Norfolk men have practically gone in for the 'split' lugsail. The luff of the old dipping lugsail before the mast has become a

LOWESTOFT DRIVER—ALL SAIL

small staysail of almost identical proportions. The fore-and-aft mainsail retains roughly the size and shape of the former lugsail as it stood abaft the mast. The foot is cut so that the sail sheets to an iron horse just before the mizen-mast, and no main boom is used. Practically no alteration has been made in the placing of the masts, and consequently the long space between them available for handling fish and nets, which is one of the principal advantages of the lug rig, is retained. The forward rake of the mizen, which has been adopted

in the majority of large mizen-carrying fishing-craft at the present day, has been exaggerated in a remarkable degree in these boats. In place of the old standing lug-mizen this has also been made a fore-and-aft sail, fitted with a boom along its foot, sheeted to the end of the round counter. The convenience about this sail is that, when lowered, it is gathered up by its lacing or mast rings on the mast, out of the way of the crew, the bunt of the sail being easily made up on the gaff,

LOWESTOFT DRIVER—BAD-WEATHER RIG

and the boom topped up. Everything is thus stowed out of the way, and the long mizen jigger is got rid of.

There is a little more gear aloft in this than in the usual lug rig, for the pole-mast is adhered to, and when lying to nets the fore-mast is lowered aft by means of the forestay and a tackle and winch, just as in the case of the lug. There is the additional advantage that the small staysail may be replaced by a balloon staysail, the most powerful of fine-weather sails in light winds, and yard topsails can be easily set on both masts.

Both main and mizen sails are fitted with bonnets

by which the weight and size of the sails are easily reducible in hard weather.

The build of the boats themselves has improved remarkably of late years. The newer boats are large carvel-built vessels of remarkably sweet lines. A handsome round counter is the rule, in place of the old counter overhanging the transom-stern below.

GORLESTON CRABBER

The bow is clean, but full enough to give lifting power in a seaway. A considerable number of these boats have been built in Cornwall of recent years.

The small local open and half-decked boats employed in shrimping and long-lining are rigged in the regular Norfolk fashion well known on the Broads, namely gaff and boom mainsail, and one large jib set on a longish bowsprit. An enormous gaff topsail completes the outfit. They are beamy boats, with a broad

transom-stern and centre-board, and carry their pile of brown canvas well, and in short are a very handy type of craft.

The Wherry

The boat *par excellence* of Norfolk is, however, the 'wherry,' employed upon the inland navigation of the

WHERRY—WHOLE SAIL WITH BONNET

Broad district. She is, perhaps, the best known of our distinctive types of sailing-craft by reason of the accessibility of the Broads to large numbers of our fellow-countrymen who prefer sailing close to a bank by day, and tying up to a bush in safety by night, to practising the art of seamanship among the uncertainties and excitements of tidal waters. The form of the black, high-peaked sail brings back to many recollec-

tions of healthy days among quiet scenes, first impressions of the unreasoning strength of the self-willed jib-sheet, of the obstinacy of the reluctant quant, of the tenacity of certain kinds of mud, or lessons in hard facts about blocks and ropes and saucepans, which are well for any man to have, and are nowhere better got than in the Broads at Easter, or in a wet summer.

WHERRY—REEFED

It is in autumn, winter, or early spring that the deep-water boat-sailor will most appreciate the qualities of the Norfolk wherry, and the admirable handling to which she is subjected by her crew. When the bonnet is off the mainsail, and a cold wind howls through the big forestay, the wherry is at her best. For there is skill and nerve required to take thirty tons of cargo and fifty feet over-all length through the narrow rivers

of the Bure or Ant in half a gale of wind; yet the wherry's skipper, with the possible assistance of his wife or son, thinks nothing of it, and would feel far less sure of himself if he had thirty miles of comfortable sea-room on every side of him.

The wherry is a light-displacement boat, the first necessary qualification for shallow-water navigation. The draught unloaded is under 2 feet 6 inches, with a beam of 13 feet, and length of about 52 feet. The bow is short and hollow, and the greatest beam is well forward, partly no doubt to carry the big mast, which is placed under a quarter of the length from the stem. The stern is sharp, wherry-fashion, and the run aft is fine.

The mast, a fine stout spar about 40 feet to the hounds, has but a single forestay, by which it is lowered and hoisted in its tabernacle, 30 cwt. of lead bolted to its foot making this manœuvre the simplest of matters. Simplicity is the keynote of the wherry's rig, and a single halyard hoists the long 30-foot gaff. The halyard, by an arrangement seldom seen elsewhere, runs through the large double block at the masthead to a single block at the throat, back to the second sheave of the masthead block, and so to the peak, where a bridle distributes the strain. The arrangement is so simple and efficient that I often wonder it is not more extensively used in small craft carrying fore-and-aft sails. The wherry's sail has no boom, and the sheet travels on a horse on the after end of the cabin-top, in front of the helmsman.

It is a lesson in light-displacement sailing to see the wherryman leaning with his hands in his pockets

against his tiller, dodging along the leeward shore, now and then luffing off a little, but mostly depending on the pressure of the water between the mud to leeward and the sharp bow to shoulder his ship off to windward. In this way, with hardly any diminution of speed, the wherry will work along a reach close-hauled, with the wind so far ahead that she can hardly lay it, while a heavy-displacement boat has to tack many times to keep off in deep water, and if she does not completely avoid the neighbourhood of the mud, a big wave drags up astern, emptying and filling the dykes, and deadening her way until she seems almost to be aground.

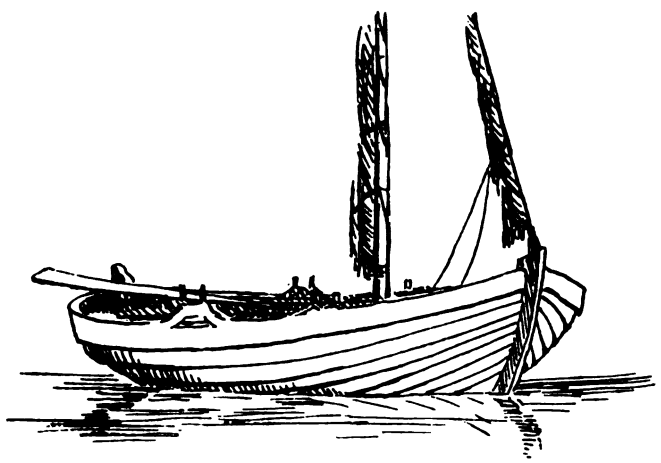
The other most striking manœuvre of the wherry man is that of shooting a bridge, when he douses sail, lowers the mast, hoists all up, and is under way again in about a minute and a half.

A considerable number of these boats are now built and fitted as pleasure-boats, the long hold and raised hatches making absolutely perfect accommodation. For cruising in sheltered waters it is safe to say that no boat can equal the wherry, but don't ever be beguiled to sea in one. In the smallest wind and sea the wherry loses her head entirely, and develops a suicidal tendency to bury herself and crew.

The Thames Estuary

When Edward the Confessor builded his great church to the glory of God and the honour of the blessed Saint Peter, where Henry's proud Abbey of Westminster now stands, it is recounted that upon the eve of the consecration, a solitary fisherman was hauling

his nets from his boat upon the shallows of the wide river. A venerable-looking traveller hailed him from the shore and asked that he might be ferried across to the new Abbey Church upon the Isle of Thorney, and forthwith as the stranger landed the great windows of the church were filled with light, and the lofty stone vaulting with the glorious music of the Hosts of Heaven. And thus was the church that night conse-



'PETER' BOAT

crated by the heavenly choirs and by the holy Saint Peter himself.

No coin did the saint leave on the afterthwart of the poor fisherman's little boat, but a blessing to all good Thames fishermen, which has lasted down to our own times—until the days when Satan, as some do aver, placed steamboats to ply upon the river, and stone embankments along its shallows, and turned it into little better than a tidal mill-sluice.

Such is the first authentic record which we have of the little 'Peter' boat, which has been a characteristic

Thames type longer than the present Abbey walls have stood. The grateful fisherman after that long-remembered night evidently took the liberty of calling his boat after the fisherman's saint who had so honoured his humble craft, and so the name was handed down, and the simple build of the old Thames fisherman remained characteristic of the river, so that even as late as 1901, when the writer was last at Putney, two weather-worn little 'Peter' boats lay there as it had been eight centuries ago.

In E. W. Cooke's time these little boats were still fairly common above and below Bridge, and he depicted them frequently. They were shorter than the old Thames wherry, more beamy, and higher in the side. They were stem and stern alike, and had no gunwale (wherry fashion), and being sturdy in build could carry sail and stand rough water when required. They had a fish-well nearly amidship, and were probably the first form of 'well-boat' built for fishing purposes among Western nations.

The Hatch-boat

The Thames 'Hatch-boat,' the glory of the Thames before steam days, was an offspring of the humble Peter boat; it had its origin in the need of the fisherman for larger boats in the rough tidal waters of the lower Thames, and a large class of wherry-built sailing-boat with a half-deck and cabin shelter came into use both for fishing and for general waterman's work among the shipping. The late Mr. Cooke seems to have taken a real pleasure in delineating these boats, and there is no doubt that they were among the smartest of the smaller sailing-craft of their day.

Rigged at first with the simple old spritsail and foresail, than which there is still no better setting, handier rig for a small open boat, they soon had added a topmast to enable them to catch the light airs floating above the river banks in fine weather. The sheets ran upon a horse, and the mainsail was quickly and easily

OLD THAMES HATCH-BOAT (AFTER E. W. COOKE, R.A.)

brailed into the mast. In the larger boats a regular gaff mainsail was eventually adopted, without a boom, and fitted with brails as in the older spritsail, and vangs controlled the gaff.

A small mizen was often added, and running bowsprit, and the boats reached eight and ten tons burden, with roomy cabin and well-space. But to the last even the largest of the hatch-boats retained the beautiful

wherry model, the sharp stern, and the yoke steering-gear common to the tribe. And what beautiful cruising boats they would have made to the modern Corinthian yachtsman!

OLD THAMES HATCH-BOAT

The Thames Barge

The Thames Barge, one of the most distinctive types of sailing-vessel, is a native of the Medway and London rivers, but claims Dutch descent. The rig is the sprit-sail of the old Lowland traders, the great convenience of which consists in the fact that the sail is furled aloft, without coming on deck, while the chief weight aloft is brought very low on the mast, to the heel of the sprit. This spar, often 60 feet long, is held at its heel by an iron

cap shackled to a shoe upon the mast, and a stout wire heel rope leading aloft. Its weight is enormous, and causes more anxiety to the barge skipper at sea than any

'STUMPY'

other part of his gear, and when the vessel is rolling with a bit of a sea, it is an unpleasant shipmate even to the oldest bargeman. A powerful staysail sheeted to a stout wooden horse, and a small sprit mizen sheeted to

OLD FASHION 'STUMPY'

the long rudder, comprise the sail area of the ordinary 'stumpy' or pole-masted barge.

The larger barges, however, running from 72 to 80 feet in length, carry a topmast, setting a big jib-headed

topsail, and are known as topsail barges. The sails mentioned are invariably tanned with a preparation of oil and red ochre, to protect them from the weather, for they are stowed aloft by brails worked from a hand-winch on deck, and are never covered up. A light-flying jib, designated by the bargeman 'spinnaker,' is set in light weather from the topmast head to the stem. This is generally of light duck; and in all the large new sea-going barges a bowsprit is added carrying a fair size jib

SEA-GOING BARGE

as one of the usual working sails. In these vessels the mizen, instead of being stepped on the rudder head as was customary in the old barges, is stepped well inboard, and is so increased in size as to be of great use if anything goes wrong with the mainsail or its spreet. In fact, these craft are developing for Channel trade into regular ketch barges.

Drawing about 14 feet with their leeboards down when loaded, and able to float in two feet of water when light, these vessels are without exception the handiest cargo carriers in the world. They are fast to

windward, quick in stays, and handy in every point of sailing in any wind. With a crew consisting only of a man and a boy, you may meet them with all their rigging lowered on deck, at Hampton Court, or making their way, with sweeps out, through the London bridges; with mast on end, and the vane fluttering 70

IN SEA REACH

feet above your head, among the fields of Kent, or working under topsail up a placid creek not wider than your drawing-room; with close-cropped canvas slashing round Dungeness in half a gale of wind, or rolling up mid-Channel merrily. From Bruges to Plymouth, from the Fal to the Wash, in any town or village with three feet of water, there, likely as not, you will find a

Thames barge, with her warm brown sails brailed up aloft, and her gaudy spreet and stern adding cheerful colour to the scene.

As my friend the skipper of the good barge *Mary and Jane* said to me one day, as he looked proudly down at his craft lying with mast and sails on deck, up at Putney: 'Yes, it 's heavy gear that is, but me and the

BRAILING UP

boy can put it all on end in ten minutes. It 's a bit of a job for two sometimes in a hurry; but see what she 'll do: she 'll do anything ye ask in reason, and go most anywhere's if there 's water enough to wet your boots. She 's like a toy, that 's what she is,'—which explains in a word the ubiquity of the Thames barge. Deep-sea sailors may look askance at the barge beating down-Channel in half a gale of wind, with her decks all awash, but as my friend says in Sea Reach, pointing

scornfully at a high-sided barque rather tender under

OLD THAMES BARGE, 1820

upper topsails: 'Lor', I 'd rather be in 'er than in that lot, rollin' like a hempty lighter! I knows her any-

TOPS'L BARGE, OFF DOVER

ways, and she 'll go through more weather than any man 'as the heart to put her through, she will, and them

sailor men 'll want to be 'ome 'fore me and my barge takes in our torps'l.'

The form of rig of the Thames barge of to-day has not been long stereotyped. In fact, changes and developments are continually taking place even now. From old drawings it is evident that the gaff mainsail was at one time much used in this type of vessel,

HAY BARGE

before it became so distinctive, and that the square-sail and square topsail were frequently used in sailing free.

The charming and clever drawings of Mr. E. W. Cooke, R.A., the greatest of our boat artists, show that as late as 1830 the flat overhanging Dutch bow, seen still in the dumb lighters in the Thames, was general. Mr. Pritchett, in his book published in 1899, also shows this shape of bow in his drawing of a Medway barge,

but at that time it had been practically out of date for many years. The straight bow of the present day is quite modern, and undoubtedly makes for speed, and gives that patient 'take me where you please' expression which is on the countenance of every decently behaved barge.

In speaking of the Thames barge a word must be

HAY BARGE, 1828

said of her skipper and the boy. So far I have never met an unpleasant or an incompetent member of either class; such may exist, but they are few and far between. They are mostly frank, generous, cheery, and thoroughly at home in managing the towering masses of spar and canvas by which they make their voyages in all weathers by night and day, summer and winter. Like all true seamen, they are always ready to bear a hand, to spin a yarn, or to crack up their own ship. They

will go out of their way to oblige you; if you sh
for a voyage they drop the 'sir,' and expect you to
your honest share of work. They will afterwards w
six miles with you 'to see you off.' They are eas
pleased by any little show of friendliness, and
emergency they are of all men laconic and swift to a

Once when beating down Sea Reach on the ebb
a stiff easterly wind, a condition of things which

LOWERING MAST

often trying to upper spars, the weather topmast
of our barge carried away close to the deck. I loo
aloft and saw the topmast whip like a trout rod.
by sheer instinct, without a second thought or a w
spoken, my friend the skipper was spinning his w
like an express locomotive's fly-wheel, and round
came upon the other tack. The boy hearing the re
sprang up through the fore-hatch, and before I c
get forward and had dodged a comber and got ro

the lee side, he had secured the broken end, and in few minutes all was set up again. She was put back on the other tack, and then as the skipper looked approvingly aloft, he took his pipe out of his mouth, and reflectively made the only remark which passed on the subject, 'Near thing for the topmast: beautiful spar,' and then resumed a yarn about his wife.

But a topmast does not always hold on so long, and when making time into the London river with an

'STUMPY,' BRAILED

easterly gale, under topsail and brailed mainsail—an unusual combination of sail-spread which is in great fashion with the bargeman—topmast and topsail, with a crash and a tremendous clap, go soaring away over under the lee of the mainsail. The boy looks up the after hatchway and smiles; the skipper remarks, 'There she goes!' but doesn't move his pipe or a spoke of the wheel. There is nothing to be done until they get to shelter, and they know it. But conceive for a moment what confusion and excitement there would have been on a Chinese junk, or a French chasse-marée, in the

mob which is usually required to work a vessel of the tonnage of the Thames barge.[1]

The Bawley

The Bawley is a shallow-draught, wide-beamed native of the Thames, and is well designed for the requirements of a fishing vessel which must knock about the great estuary, dodging along the edges of the innumerable banks in search of fish, tide-cheating over dangerous flats, or beating through rough tidal seas in the open channels. With its high freeboard forward, the Bawley has a somewhat haughty expression of countenance. It has a short lower mast, long and clumsy masthead, and a very long gaff, giving a nearly perpendicular leech of the mainsail, which has no boom, but is sheeted to a horse inboard. These peculiarities, with the long, heavy bowsprit, do not make the Bawley beautiful as regards its sail plan. Yet no more pleasant-mannered, amenable little craft exists, and if in a calm the Bawley does look a rather untidy, badly dressed little creature, remember her beauty when, with spitfire jib and half-brailed mainsail, she is soaring over the wicked-looking

[1] The dimensions are roughly as follows:—

Mast to hounds,	30 feet	40 to 50 tons register.
Topmast to hounds,	36 ,,	120 to 125 tons carrying capacity.
Masthead,	6 ,,	150 tons displacement.
Length spreet,	53 ,,	72 to 84 ft. length.
Diameter,	11 inches	14 to 18½ ft. beam.
		6 ft. loaded draught.
		2 ft. unloaded.

Materials—oak and Oregon pine.

12 to 17 ft. length of leeboard.
8 to 10 ft. drop of leeboard below bottom.
7 ft. 6 in. width at bottom.

3600 to 4000 sq. ft. sail area.

Cost—about £1100 for first-class barge.

The sea-going barges show a tendency to increase in all principal proportions.

seas down Swin in half a gale of wind, light-heartedly shaking the combers off her that would puzzle many a twenty-tonner. Then the spirit of the deep can call the beautiful individuality of a living being out of this ugly, commonplace-looking little boat.

And in the matter of her dress no type of boat is worse used than the Thames Bawley; her poor main-

BAWLEY

sail has no rest in any weather, and half the time she is under way it is being pulled about with brails, and having every trick played upon it that a long-suffering, handy little sail can undergo, brailed up to check the speed of the trawl along a bank, scandalised to a passing squall, set up for a turn to windward, or triced up into the most inconceivable shape for a run down wind.

There used to be many more of these boats in the

Thames hailing from Gravesend than there are at the present time. The fish have led the Bawley farther afield, and the more open waters of the present cruising grounds have resulted in a much larger type of boat than was known thirty years ago. Leigh, the Medway, and Whitstable neighbourhoods are now the home of this little boat, and the casual stranger who visits these places at low water may be excused for supposing that

BAWLEY, IN SEA REACH

the Bawley is a mere kind of mud crab, that spends its time dozing in placid sleep or meditation. There they lie, reclining at gentle angles on all sides, their heeling masts looking like the weathered trees of a small forest bowed in one direction by the wind. But wait for high water, and see them waking as the tide comes in to them; sitting up slowly to the first summons, shaking their mastheads lazily; and then as they 'fleet' beginning to jump and strain at their unsentimental anchor-chains, looking this way and that as

They sheer about, longing to be off, and exchanging who knows what greetings with their neighbours.

Not a few Bawleys may now be seen with a mizen added as a convenience when working nets, but in some cases it has resulted in the mainmast being placed a little too far forward, with a consequent loss of speed:

BAWLEY—OFF THE NORE

for though the Bawley is not generally fanciful, she is very particular as to where you place her mast, and a foot too far forward may quite spoil her temper when beating to windward. The old Thames boats seldom exceeded 22 feet in length with about 8 feet beam and 3 feet draught, and were clinker-built, but most of the new boats are over 30 feet long and about 11 feet

beam, and draw about 4 feet, while they are wholly

BAWLEY

decked in and carvel-built. Their great beam makes them delightfully roomy below. A somewhat deeper

CENTRE-BOARD, WITH BALANCE-LUG

class of boat is used on the northern coasts of the Thames estuary, at Harwich and in the Blackwater,

drawing 3 to 4 feet forward, and nearly 6 feet aft. The crew generally consists of three men.

A description of the craft of the Thames estuary would by no means be complete without some reference to the smart little cutters used in the oyster and local fisheries, and hailing from Burnham, Mersea, Brightlingsea, and other small ports situated on the

BRIGHTLINGSEA OYSTER-BOAT

Essex rivers. They are not unlike the Bawleys, except that they have somewhat old-fashioned counter-sterns, and boom mainsails of a pretty yachtlike cut. The lower mast is longer, and all the gear aloft is far more taking to the eye than that of the Bawley. They are remarkably weatherly little vessels, and form the

recruiting-ground of a large number of our sm
and best yachting hands, who work their boats
winter season and go in yachts during the summe
hardier training-ground than these waters in the w
it would be hard to find.

ESSEX OYSTER-BOAT

The centre-board open boats of Burnham, rigged
with a balance-lug and jib, are very fine boats of thei
kind, and would make splendid yachts' boats for owner
'cruising foreign' in big craft. For they are powerfu
and of strong clench build, and would be far bette
adapted for heavy shore work and long sailing trip
than are most yachts' boats, and bright varnished
they are they would need little doing to them.

MOUNT'S BAY LUGGER

To face p. 178.

CHAPTER VII

THE SOUTH AND WEST COASTS

ALTHOUGH facing east, the bit of coastline between the Forelands is to the sailor rather a part of the Channel navigation than of the North Sea proper. It begins or

RAMSGATE TRAWLER

ends nearly every Channel voyage; it is alive with the Channel traffic, and lives by the Channel trade, and its lights and shoals are known to every down-Channel seaman.

Ramsgate, a tidal harbour of undeserved ill-repute with yachtsmen, is a trawling port of some importance, and like Lowestoft and Grimsby owes its rise to the hardy Devon men who came eastward with their boats and made their homes on the coast fronting on the

North Sea which offered such phenomenal harvests to their trawls.

The Ramsgate trawlers are of small size, seldom exceeding 30 to 40 tons, and like the old trawlers of Yarmouth and Lowestoft still show a strong family likeness to the Brixham boats. But while the sailing trawlers of Yarmouth and Lowestoft are giving place to the steam trawlers fishing distant seas a thousand miles away, and to the drift-net boats, both steam and sailing, the Ramsgate sailing trawlers still hold their own, like their sisters of Devon.

Deep-water harbours are now far apart, and the boating conditions from Deal to the Owers are very much the same. The boat must not exceed in displacement what a capstan can haul up the beach above high water. She must be stoutly built, broad of beam, clench built for preference, and simply rigged.

Hence it comes that with but slight local variations the short boats of Deal, Dover, Hastings, or Brighton all bear a familiar resemblance.

The Deal Lugger

Perhaps most famous of them all is the Deal lugger.

The old 'cat' or three-masted Deal lugger, which used to take off anchors and cables to the sailing fleets of old which sought shelter in the great roadstead of the Downs, is now but rare. In these days of steel and steam, patent anchors and steam winches, there is very little demand for such forms of assistance from the shore, and the smaller and handier galley punt now meets most requirements.

But these Deal luggers, although rarely seen now, will ever remain famous in the annals of the sea. They have been connected from time immemorial with that famous roadstead of the Downs, and with the historic Goodwin Sands, which form at once the eastern protection and the peculiar danger of the anchorage.

They have witnessed the early sea-fights between French and English in the thirteenth century, and the

DEAL LUGGER HOVELLING

battles of Van Tromp and Blake which gave the mastery of the sea to England.

They have seen the victorious British fleets from that day to this going and coming, and have carried succour to thousands of ships, both steam and sailing, year after year, by night and day, in the dreadful gales against which the anchorage only forms at best a partial protection. And more than this, manned by their intrepid Deal crews they have left their legitimate work, and have risked all in saving ships and lives from the appalling fury on the dreaded Goodwins.

These sands, cast up and maintained by the meet-

ing of the Channel and North Sea tide-streams which eddy round this spot, rise straight out from seventy to ninety feet of water. By the tremendous surface wash of the sea and the strong tide-streams running violently and varying in direction with the hour of the tide, they are kept shorn down to some ten feet below high-water level. Hard as they appear to be in some places, they yet rapidly swallow up every wreck which gets upon them, and every beacon which has been erected in the vain hope of providing a refuge on their treacherous surface.

No more dangerous work exists in the world than the rescue of men from a ship which has once beaten in on the surface of such shallows as the Goodwin. The true power and horror of a long line of heavy breakers, rising up in foaming cataracts twenty feet high and thundering forward at thirty miles an hour as their momentum is checked by the sands beneath, can only be realised by those who have once been among them and have survived. Huge seas breaking and roaring in across the wind, their tops blowing away in sheets of solid water to leeward, and anon leaping forty feet into the air as they meet the big line of breakers, add to the terrible danger of any lifeboat or other which dares among them. A cross tide-stream running at four or five knots, the dense drift of sea-spume, the stinging rain, the gripping, shrieking wind, and the thunder in the canvas, all add to the appalling confusion.

Yet in such scenes, before the day of the splendid blue-hulled lifeboats which have earned undying fame in the hands of the storm warriors of Deal, Walmer,

nd Ramsgate, the old brown-hulled, red-sailed hovel-ing luggers of Deal[1] brought hope and help to many fainting group of desperate men clinging to the last pars of their once proud ship.

In shore life we record with pride and speedily eward the bravery of a man who gallops half a mile nder rifle fire to help a wounded comrade out of ction, or who by an instant's presence of mind rescues score of people from accident or death.

At sea, a dozen men put off in a small open boat rom their snug firesides. A black winter night and a reezing gale cannot keep them at home, for they have seen a signal of distress. It is three hours' beat against he sea and a lee-going tide, and they are all soaked nd numbed to the bone in half that time. Arrived t the weather end of the Sands, there is no sign of the wreck. The flares are burnt out or washed away. But the men who lit them may be there still: all, or nly one. It is an off-chance. But these twelve men re not going to leave that chance. 'Guess we must wait' is all that is said. Then comes ten hours' wait-ng through the black night for the winter dawn, such waiting as only such men could survive; every minute

[1] The term 'hoveller' was in use in the time of Edward III. to denote he mounted coastguards of the period, 'homines ad arma et hobilers,' sed for watching the shores, and giving warning of hostile raids in time f war. It is said to be probably derived either from the French 'hobil,' surcoat, or the old English 'hobbier,' a stout cob, as suggested in . B. Gattie's *Memorials of the Goodwin Sands*, London, 1893. Know-ng how the word 'hoveller' or 'hobler' is used to the present date in some laces in Cornwall to denote a boatman who plies for hire and is not regular fisherman, neither of the above derivations seems very satis-actory. It is a rare word, and it is peculiar that it should be used at he two opposite ends of the Channel to denote practically the same neaning. Is not 'hoverer' as likely a derivation as the above somewhat andom guesses?

in every thundering sea and stinging snow-squall threatening death. Then at last in the dawn, 'There she is!' is the cry, and away goes the willing boat under her close-reefed foresail before the seas, boldly into the breakers towering above her mast, without fear or thought except for those still clinging to the rigging. Yet the work is not done; now comes effort after effort to get near the wreck without smashing up the boat and so bringing death to all. By consummate seamanship and unerring judgment only is it effected, such swiftness of hand and eye, such patience and steadiness of heart and head as would win for this crew unending fame could men but witness it or understand it as they can a land battle or even a football match. This is sport indeed; this is pluck; this is all we venerate, and a good deal more. But these men are of the sea. Six hours later they are getting on dry clothes, and the poor rescued wretches are weeping their gratitude. A paragraph appears in a newspaper—'Great Gale. Gallant rescue; the crew of a barque saved.' And then all is done; the names if ever known are quickly forgotten; the event is buried in a score of others; and football gives way to the cricket season.

Yet among sailor men, ever shifting as they are with their fleets about the world, the Deal boatmen and their old luggers and their newer lifeboats will never be forgotten. They are heroes of the Empire second to none, and like heroes are dumb about themselves.

The old Deal lugger was a bluffer built vessel than its sister the famous Yarmouth yawl. But its rig was the same originally when each carried the old-

shioned three-lug combination derived from the French and referred to elsewhere. The Deal lugger, like the Yarmouth boat, has dropped out the mainmast amidships and retained only the mizen and foresails at either end of the boat.

These boats have always been launched and beached with great boldness up and down their steep beach. They were usually 40 feet long by 13 feet beam, and had a small forepeak for shelter. Lying stem

DEAL GALLEY PUNT

seawards, with masts stepped, they were ready for sea night and day at a moment's notice. They were held fast on the inclined ways by a chain roved through the 'ruffles' in the keel. When the trigger was knocked away, with crew on board and mizen sail set, they would shoot down the beach with square skids below, head first into the surf. Often their own impetus was sufficient to take them off through the line of breakers, but with an onshore wind a haul-off warp would be resorted to, the whole crew laying

on to it as she went off, thus ensuring her riding into deep water. Then up smartly went the foresail, sheet and halyards being set taut as she drew out.

Landing was even more dangerous, especially in the case of the more numerous and smaller galley punts, which must often stand off and on for hours before they dare risk a smooth to run in upon.

Surf work of this nature is a speciality, and the Deal and south-coast men are experts at it; but the deep-water sailor, who knows too well the power of

GALLEY PUNT—ON A WIND

breaking water, and has a horror of a lee shore, would, as a rule, prefer any other way to land.

The luggers and galley punts were alike clench built, and very strong to stand the knocking about in floating and beaching and the strains at sea, alongside ships, or carrying heavy weights in bad weather, to which they were subjected. Both were built of elm and were kept 'bright' and varnished, being thus easily recognisable even on a dark night.

The galley punt is, as its name implies, a boat capable of pulling or sailing. It is smaller than the

lugger, being from 21 to 30 feet in length with feet beam. It is still much used for tending ships in the Downs, landing pilots, and general 'hovelling' work, and the crew of four men may often be away for four days at a time on such service, which may include a tow of fifty miles or more behind a steamer waiting to take off the pilot. Such work in winter weather may be best imagined.

The mast is placed well amidships, and a long-yarded, square-headed dipping lugsail is set upon it

JIB AND MIZEN

very much like the sail used in the Shetland *sexern* and in the Arendal yawl in Norway. It is a very useful sail, giving great lifting and weatherly power, and is wonderfully handled. The short mast, its position amidships, and its lack of gear make it extremely handy in tending ships.

The dipping lugsail, the simplest in rigging, the most powerful on a reach and the flattest to windward of all known sails, is the sail of the south coast boatman, with few exceptions, from the Foreland to Land's End.

From Dover and Folkestone, now quite a considerable fishing port, westward, the mast is placed further forward than in the galley punt, and more in the position of the old Deal lugger, with a mizen and a small jib on a running bowsprit often added. This

BRIGHTON CLINKER-BUILT LUGGER

gives one of the handiest of rigs for a comparative small crew to handle; it gives an even balance of sa spread under jib and mizen for picking up a berth shooting drift-nets; keeps the boat under way wh the big foresail is dipped; and splits up the sail a handily for reefing purposes in a blow.

Most yachtsmen have met the Hastings a Brighton shore-boats up and down Channel in

thers, and have admired the power in the strong bows flying dry up and down the steep Channel s. They are usually easily recognisable by the uliar little counter built out beyond the transom-rn, the long pole on the light mizen-mast, and

HASTINGS LUGGER

he straight mizen-outrigger, carrying on the line of the gunwale, and never raked up as in the west-country boats.

From Shoreham come a finer, deeper class of carvel-built boat, many of them built down west in Cornish ports. The advantage of not having to seek shelter from bad weather up the side of a steep beach is the greater depth and size, and superior accommodation and shelter at sea, which can be indulged in.

The curious old Brighton *hoggies*, which were common up to the middle of the last century, and were illustrated by E. W. Cooke, have now quite disappeared before the superior handiness and sailing qualities of the south coast lugger.

These boats were quite peculiar, and were the nearest approach in build to the Dutch beach-boats

of the Scheveningen coast ever seen on these shores. Like them they were clinker-built, flat-floored, and round-ended, with great beam and strong bilge-keels. They carried a sprit or gaff mainsail, and often a sprit or lug mizen, with a stay foresail set out on a peculiar flat wooden bumkin, raked well down forward. A running bowsprit and small jib were occasionally used.

Some variation seems to have taken place in their rig prior to the introduction of the now usual lug-

OLD BRIGHTON 'HOGGY' (AFTER E. W. COOKE, 1828)

rigged boats; for while for some time they used the high boomless gaff mainsail familiar in the little Itchen sloops with perpendicular aft leech, in Cooke's time they had certainly nearly all adopted a lower cut spritsail and mizen.

A particularly fine, powerful class of open clinker-built yawl is used on this coast for pleasure purposes in the summer, and the splendidly effective build and

of these boats is often obscured by the nature of service to which they are put.

The Itchen boat brings us further west to the

SOUTH COAST YAWL

strong tides and narrow channels of the Solent, where short tacking and quick turning are a *sine quâ non*,

ITCHEN FERRY-BOAT

and where consequently the dipping lugsail is no longer suitable. The local rig has always been the

gaffsail, or, as in the old Portsmouth wherry, the spritsail, with straight leech up and down and no boom, which required no dipping in going about, and was light and simple to handle.

The similarity of the sail-plan of the old Itchen boat to that of the service launch and the quay punt and oyster-dredger of Falmouth is somewhat striking.

SERVICE 40-FOOT LAUNCH

All are the result of a plan designed for somewhat similar objects.

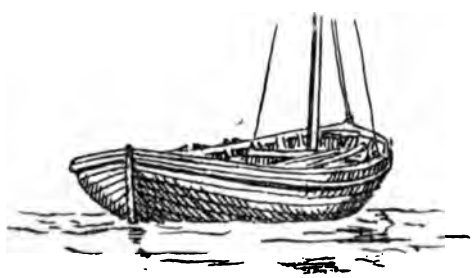
The service launch is fitted with the 'de Horsey' rig, the object of which is short spars and snug sail and mast-plan all inside the boat. A mainsail with perpendicular leech which is boomless for quick handling, and a fore staysail, are the working sails, topsail and jib-topsail being only adjuncts for fine weather and plain sailing, just as is the case with mizen and jib in the other boats mentioned.

While the Itchen boat was used for fishing and

piloting, and was consequently a heavier sea-going boat able to stand up to a lofty mainsail, the old wherry which plied at Spithead as a ship's tender and passenger boat, remained a light open skiff in

SERVICE LAUNCH—REEFED

construction. The centre of effort of its sail area was kept low, as should be the case in all open sailing-boats, and its masts short for going alongside shipping; while for convenience in handling, when loaded up with passengers or luggage, the sails were all inboard



OLD PORTSMOUTH WHERRY

and split up into main, mizen, and fore sails, a simple and handy rig for any class of yacht's or ship's boat.

The Solent men have always been consummate fore-and-aft sailors, and the earliest pictures we have

of Cowes Roads show that the local cargo-ca was a dandy-rigged vessel as early as the eighte century. On a fine morning off Gilkicker Fort I l counted no less than eleven of these boats in s from the deck at one time.

Further west are two ports which have alw been strongholds of the fore-and-aft smack, wh

OLD PORTSMOUTH WHERRY

as pointed out, has always been the favourite ri the deep-sea trawler.

Brixham was a fishing-station in the time of Armada, and the fore-and-aft rig was probably veloped by the Brixham men as early as the sixte century. Although records are scanty, it appears trawling was somewhat extensively practised the the beginning of the nineteenth century, but vessels and trawls were all small compared with t of the present day.

Following the intrepid wandering spirit of

ce, numbers of Brixham men settled by degrees at stern ports such as Ramsgate and Grimsby, using ose places as the stations from which they could

BRIXHAM TRAWLER

ore conveniently reach fishing-grounds presenting uitable conditions for the use of the deep-sea trawl, which was rapidly growing in favour.

PLYMOUTH DRIFT-BOAT

It appears more than probable, indeed, that the eep-sea trawl was first worked in the North Sea by he west-country seamen, and was afterwards adopted

by the east coast men, first in the Thames estuary and ultimately more widely along the coast. To this day the big North Sea trawler differs in sail-plan from the North Sea driving and long-line boats, and is the counterpart of that of the Brixham and Plymouth trawling smacks.

So late as the seventies the Brixham trawlers were

PLYMOUTH TRAWLER

all cutter-rigged vessels, from 25 to 40 tons, but since then the larger class has discarded the long heavy boom for rough sea work, and, in common with the majority of English fishermen, has adopted the mizen. The result is a very beautiful class of dandy-rigged vessel running up to 60 tons and 70 feet in length. The time to see these boats is when they are soaring over a south-easterly sea with a gale of wind, with

topsail set, and travelling dry and comfortably at eight or ten knots.

A marked characteristic of the west-country trawler is the forward rake of both masts, which is more pronounced than in those of the east coast ports. The 'mumble-bee,' the small class of Brixham boat, still retains the cutter rig.

The Plymouth men, who followed near on the heels of Brixham in the use of the trawl, have held on to the cutter rig somewhat longer than the large Brixham boats, and in the eighties as a boy one used to see with admiration these splendid smacks beating to sea in the heaviest weather with the huge mainsails close-reefed and storm jib bending the bowsprit (which seldom had a bobstay) like a trout rod, as the high, straight bow soared over the big Atlantic roll. In the drift-fishing, however, Plymouth men prefer West Cornwall built boats either with the Cornish lugsail or dandy rig; but they seldom keep their boats or gear in the same smart condition as do the Cornishmen.

Westward of these ports comes the rugged coast-line of Cornwall, with its many creeks and coves, all of which give protection to a seafaring population owning and working their own little sailing-craft.

While mining in the Duchy is decaying, and agriculture but holds its own, the fisheries give employment to some 50,000 souls, and a large number more follow the sea in deep-water ships, and especially in the smaller classes of coast traders. Scarcely a creek or pier of any size but owns its topsail schooner or its ketch, often beautifully modelled and finely canvased, or its old-fashioned smack of a hundred years ago, engaged in

local cargo-carrying to Wales or up-Channel, or in foreign voyages to French and Spanish ports. Just as in the time of Queen Elizabeth, so to this day these little vessels of 200 to 300 tons journey fearlessly about the stormy western seas, across the Bay, or to the cold North Sea. Their reward is less than in those cheerful times, and nothing is ever heard of their quiet daring. Yet any day from the midst of the winter night-rack a small staggering bit of a ship with three or four feet freeboard comes in dripping to the pier-side, quietly and without noise or fuss, as if from across the bay; safely moored and with ropes coiled down, the skipper (who is often as not the owner) and his crew leave her to go up to their homes on the cliff above, and inquiry will elicit the fact that they have not been home for three months, and have sailed some thousand miles since last their vessel lay in the snug home-berth. A few days, and they are at sea again; winter, summer, or equinox alike, when the liners put back, and the lifeboats are out, no less than when the white-sailed yachts go forth, they are steadfast at their work, earning the modest profit or more modest share or wage which is their living.

The Cornish Lugger

The rig of the Cornish fisherman is the lugsail in its most simple and most powerful form. In the little open boats of 20 feet keel, as in the big decked boats of 40 tons measurement, the favourite rig is the dipping lug-foresail and standing lug-mizen; and for the wild seas they navigate no more suitable rig could be devised. As nearly every Cornishman, whether miner

or fisherman, has been brought up to 'knaw tin,' so, whether fisherman or miner, he has it somewhere in his blood to handle a lugsail boat.

I doubt if any finer boatmen are to be met with

LONG-LINER, OFF LAND'S END

than the crabbers and long-line fishermen, whose little open boats may be seen hauled up inaccessible cliff-paths in the rough exposed coves among the cliffs,

LAND'S END CRABBER

or ranging wide at sea twenty or thirty miles from their capstan in any weather that a boat may live in, and in a good deal that theoretically it may not.

The majority of these boats are about 20 feet keel,

some range up to 23 or so, but they become too big to handle in the cove if they exceed that. They have straight stems, high sides, beam about one-third of their length, and transom-sterns. They are all open,

30-FOOT PILCHARD BOAT

with four or five thwarts, with light bulkheads underneath them dividing off the ballast-room from the fish, and so on. The floors inside are generally built fairly

LIZARD LONG-LINER

high up, and a pump is fitted in front of the helmsman, draining overboard.

The mizenmast and outrigger are generally left standing both ashore and at sea, while the foremast

is lowered down aft when the rolling fishing-ground is reached or the boat is grounded in the cove.

The mizen is often stepped some way inboard, so that the helmsman sits abaft it. As in the larger boats, the sails are seldom reefed, but as the wind increases a smaller mizen is set and the large one moved forward and set in place of the foresail. As Wyllie has been the interpreter in colour of the Thames barge, so Napier Hemy has made these little

MOUNTS BAY CRABBER (BIG SAILS)

craft and the rolling green seas of the Cornish coast familiar to all picture-lovers.

But it is in the more protected ports and bays along the Cornish coast that these boats have been developed into as fine a type as is to be met with in any sea of the world. The fame of the Penzance luggers is world-wide among seamen, and justly so. But although the boats are registered under the letters P.Z. at the port of Penzance, they in reality hail principally from the three picturesque fishing-ports of Newlyn, Porthleven, and Mousehole. The first of these has won a distinc-

tive name in the world of art, the second is scarcely less renowned for the admirable quality of the work turned out by its boat-builders, who supply distant fishing-ports as far north as the Tyne with some of their finest, fastest drift-boats. Mousehole, if the smallest and least known of the three, could, not so

MOUNTS BAY DRIVER WITH TOPSAIL, CLOSE-HAULED

many years ago, at least claim the distinction of being unsurpassed for the strength and variety of its smells.

These boats, and those of St. Ives, a little port quite distinct upon the north coast, have followed the inevitable rule; as competition and the greater distances to be covered in search of fish have forced their crews to go further afield, they have increased of recent years in size as well as in number, and many of the larger boats run to over 50 feet in length. The

proportion of one-third beam is pretty regularly maintained, with a draught of 6 to 7 feet.

Although a certain number of these boats retain the transom-stern of their smaller brethren, in which plenty of width aft is a desideratum, and some of the larger modern boats have tried the counter-stern, most of them are built stem and stern alike. And it is the fulness and boldness of the curves at the quarters

PORTHLEVEN LUGGER

leading off to the stern-post that form one of the handsomest features of the west Cornish boats, and give them a peculiar appearance when heeling even at a considerable distance.

The origin of the build of stern in these boats is said to be in the smallness of their harbours. Lying side by side they may be seen in Mousehole or Porthleven at any time, so closely packed that there seems to be no room for a single other boat. Yet two or three more will come running in from the offing, round

the pier-head, and finally wedging their bows into the angle formed by two sister boats, force them apart, and so make a berth. Such situations make overhanging ends or square corners *de trop*, and explain the strong rubbing strakes which form so distinct a feature of these boats.

The present extensive drift-net fishery of the west had its beginning in the small pilchard 'drivers,' which seldom exceeded 30 feet in length, and were only half-decked. It was one of these boats, commanded by

MACKEREL DRIFT BOAT

John Hocking of Newlyn, which made the passage to Melbourne in 1846, and took the mails from the Cape. She had to lie to a sea-anchor several days in the westerly gales on the passage from the Cape, but otherwise was never seriously inconvenienced by weather.

The mackerel drift-fishery has gradually come into prominence, and the larger boats are employed in this fishery in the spring. The usual class is 43 to 47 feet long. A larger mesh and greater length of net is used, and the fishery commences early in March, the boats

going out to find the fish as far as a hundred miles west of Scilly, or south from the Lizard. At this period a large number of east coast boats from Lowestoft, Yarmouth, and from other fishing-ports such as Shoreham, visit the Cornish coast to participate in the mackerel fishery.

Huge French ketches hailing from Boulogne, 90 feet in length, and with crews of whom sixteen may

BOULOGNE 90-FOOT DRIFT-BOAT

be seen on deck at a time, are also prominent with their gay mizzen-trucks, white painted blocks, white bow wave-line, huge spars, high sides, wide sterns, and forming a most remarkable class of drift-fishing vessel developed from the English North Sea fashion.

Later on, as autumn advances, all these 'drivers' may meet again up-Channel and off the Yorkshire coast—the little, clean-cut Cornish luggers, or the big east coast dandies, racing the tall-masted Scotch 'Fifies' in from the offing with their cargoes of herring.

For this fishery another entire set of nets is necessary, with medium-sized mesh.

On the south and east coast of Ireland, too, at this season many Cornish boats may be met with following the herring in company with their Manx brethren.

It is remarkable that these Cornish boats so favour-

EAST CORNWALL DRIVER

ably impress the people of the ports they visit that there are few places to which they have found their way which do not own some Cornish-built boats of their own. Many a 'driver' I have seen with the letters of some distant Irish, English Channel, or east coast port upon its bows, but having in its clean, easy waterlines the unmistakable stamp which I knew from

boyhood, and inquiry showed she was a native of the west country. Porthleven is building at this moment for Lowestoft and South Shields; while the whole Manx fleet, which when Houldsworth wrote in 1874 was dandy-rigged, and had then admittedly adopted the mizen from the Cornishmen, is now built and

MOUSEHOLE DRIFT-BOAT

rigged exactly on the model of the Mounts Bay boats, with a few local differences which the keen, practical Manxmen have evolved on their own account.

The long mizen outrigger would appear to be the chief source of weakness of the Cornish lugger, standing as it does alone without any form of stay whatever. In order to be clear of the sea when plunging it is topped up at a considerable angle by a huge timber

chock, generally painted white, like the rudderhead, stemhead, and other points of the top works. Only in two or three cases have I heard of its being carried away at sea, and in each case it went just outside the gunwale and was easily secured, hauled inboard, and chopped down to fit the heel-iron, a smaller mizen being set upon it, and the whole job completed within an hour of the accident. This outrigger, often as big in diameter as the foremast itself, is always stepped on the port side, and as a consequence the mizensail

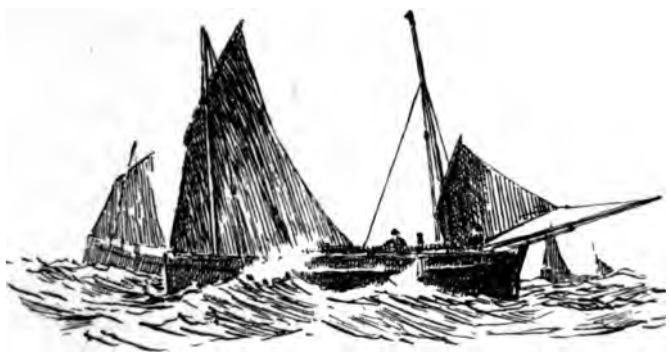
STORM-SAIL

is always set to port of the mast,[1] while the dipping foresail is of course always set to leeward. Cornishmen very rarely carry the sail against the mast even for a short board, whereas the Scotch may often be seen with the tack into the mast, and the sail standing against it. This is largely owing to the greater hoist, size, and weight in the lofty Scotch lug, which makes it much more difficult to handle.

The mizenmast is slightly shorter than the fore-

[1] This is also the rule in the Manx boats.

ast to the halyard sheeve; above this, however, is a ng pole for hoisting the mizen topsail, which makes onsiderably higher than the foremast over all. The st is stepped a long way inboard and is given a at rake forward, especially in the newer boats, ugh it is never so excessive as that of the east st drift-boats, or again in the Scotch luggers. One son given for this rake is that it throws the sail ther inboard, and fishermen believe that the larger sail area inboard, the greater the speed. It is very



A HEAD-SEA

ssible that bringing the centre of effort of the mizen rther forward conduces to less weather-helm in a eeze, and better balance of sails, and therefore less e of the rudder and more speed. But in the Cornish ats it also enables the mizen outrigger to be topped higher out of reach of the water without spoiling e flat set of the mizensail.

In reducing canvas for increasing wind, the mizen-il is set as foresail. The tack is then taken forward the mast as far as is necessary to enable it to sheet ir to the foresail sheets without being pulled out of ape. In the case of the smallest storm mizen being

set forward, it generally sheets fair with the tack to the mast. The small triangular 'watch' mizen will then be set aft.

It is noticeable that the West Cornwall men very seldom set a jib, and although there is a stout forestay to the mizenmast they never set a staysail upon it as do the Manx 'Nickeys.' Yet there is no doubt that in light winds the Cornish lugger is under-canvased and cannot compete with the big Lowestoft

ST. IVES BOAT, WITH MIZEN TOPSAIL

dandy-rigged boats, which carry main and mizen topsails, spinnaker, and balloon staysails. The Mevagissey, Fowey, and other East Cornwall boats use a light-running bowsprit and jib very much; such a device does not add materially to the weight or gear to be handled, and especially in reaching is a great addition of power, the jib when well cut being essentially a lifting sail very valuable for speed. In a lug-rigged boat in the east it was my experience that a light bowsprit involving the minimum of gear, with a small storm-jib set upon it, was of great value even in

beating, and involved no difficulty in handling; and one cannot help being of the opinion that the West Cornish boats would benefit greatly in ordinary weather from a perhaps slightly loftier foresail, a jib and bowsprit, and a possible mizen staysail in boats of greater length. A large jib when close-hauled, especially if flattened in too much, will do more harm than good to most boats; a jib needs judgment in setting more than perhaps any other sail except the Chinese lug. But men who take such care of and use their sails so

A LONG-SEA OFF THE WOLF

well as the West Cornwall fishermen, could be trusted to get the best out of a jib if they once adopted it for light weather. Such a bowsprit as is suggested would be a very different thing from the enormous spar with its weight of gear, stays, and whiskers, which was considered necessary to give the required head-sail to the old knife-edge cutters of the seventies and eighties, and which used to cause so much heavy plunging and be such a cause of real weakness to those craft. Nor need it emulate the tree-trunks used by the Boulogne fishermen as bowsprit, which are actually little less

than sixty feet long from heel to point. A light-running spar is all that is necessary, and quite a moderate-sized sail would do in ordinary weather.

The Cornish lugsail is probably as near perfection in cut as any sail upon the seas, and while the sail-maker has acquired the art of cutting, the fisherman is no less successful in the art of setting. In fact, of all the fishermen I know, none come so near being yachtsmen as the Cornish. It is well-nigh impossible to see a Cornish sail pulled out of shape by careless stretching: hard, straight luff, full leech, and rounded foot are all there; no concave outlines such as are common enough further round the Channel.

An hour after her catch has been landed, all on board the Cornish boat is scrubbed down; not a scale remains on deck, not a spare rope-end is loose; and all the sails are furled and stowed beneath the coat in a big bundle in the lumber irons. Down below equal order reigns, and the visitor is welcomed by a sense of cleanliness which is not by any means usually associated with fishing-craft. And the clean-lined Cornish boat is a yacht not only in appearance but in speed, and especially in the highest test to which men or vessels can be put, beating to windward in a seaway. I have often seen a Penzance lugger out-pointing much larger east coast fore-and-aft rigged vessels, and at the same time outpacing them fast, making a very close thing with a large modern-built yacht. The most inspiriting thing that any man may see, or still more take part in, is the beat-out of the Newlyn fleet in half a gale from the eastward; a

hundred or more racing for the fishing-ground, like a flock of hardy, brown-winged seabirds.

And each clean-lined boat has its own story it could tell. They look alike enough at sundown rolling at their nets, just as you and I are alike to the stranger until he knows our tale. And this is the tale of

NEWLYN BOAT—SMALL SUIT

St. Michael, 55 P.Z., and many others are like unto it with variations.

St. Michael was new at that time, and had a counter-stern like an east-country boat's, and but little luck in fishing; small catches and damaged nets too often. There was the skipper, Roger Sennett, my old friend, and there was a crew of six men and the boy; one of whom being ill, Uncle Dick went in his place. Now Uncle Dick had been to South Africa and had made his 'fortun,' such as Cornish miners reckon it. And by reason of his being sick

with a dose of malaria which could not be parted from him, he was wearing all that a deep-sea fisherman wears in winter, including vast sea-boots and a complete set of oilskins. It was thirty miles off the Lizard lights when everything was ready in the *St. Michael* to shoot the nets for the night. She was running down-wind with small mizen and foresail, and the big westerly seas rolled up astern, backed by the fierce breeze, which with a falling glass threatens a nasty night for all who must be at sea. And as she was cautiously jibbed preparatory to bringing to, to lower sail, the boy against orders got down to leeward, and when the foresail sheet gathered itself up and with the crack of a pistol went rigid as a bar of steel, it caught the astonished boy beneath the armpits and hoisted him instantaneously and irresistibly into the air, shooting him twenty yards away into the glooming seas. Uncle Dick stood on the weather quarter and saw; he turned quickly round, and as he stood plunged over the stern after the boy. The cry of 'man overboard' does not avail to bring a vessel into the wind when running at nearly ten knots before an Atlantic blow. With helm hard down and all hands hardening in the sheets, she will be four hundred yards to leeward in the time that you can say it. So the sweeps and all available floating stuff which minds accustomed to act impelled overboard after the lost men, were rising and falling, almost lost to sight in the spreading night to windward, by the time *St. Michael* had brought herself up to meet the seas. The quick eyes of the younger hand saw how far still to windward were those two

small heads rising, falling, and fighting watery death. Quickly he threw off his clothes, and with the end of a small line in his teeth sprang overboard to join them, and left his four mates to work the boat in time, if possible, over the lost ground. Then came the long struggle in which each simple heart seemed to live a lifetime. While the boy soon had to act rescuer to the old man spent by sickness and encumbered with his vast weight of clothing, the new arrival collected all he could of the floating stuff and fought his way to his fast-drowning shipmates. 'Cheer up, Uncle Dick; hold on, uncle,' kept saying the boy, 'here she comes. I see Roger's face quite plain, I do.' At length all were alongside, but in the heavy sea it was almost impossible to get the exhausted men on board, and when at length it was accomplished with the aid of a tackle, it was over an hour before Uncle Dick returned to consciousness, and the nearest drop of available stimulant was, Cornish fashion, in Penzance harbour, fifty miles to windward. And thither they had to go for it.

That and the like is what *St. Michael* thinks about riding to her buoy at nights. When they get a yarn at a quiet anchorage, others can cap hers for grimness but not for bravery, and few end so well. Did not the *Lone Star* see the *Mary* founder with all hands close beside her inside the Wolf? Has not the *Blue Bell* twice lost a hand on the passage to Ireland? How many boats can tell of the terrible runs for shelter in the violent winter gales, of three boats pooped and smashed to matchwood by the furious Atlantic combers within two hundred yards of the harbour pier? Such are the

secrets of Mounts Bay boats, which they do not brag about, but which one who knows their history is not likely to forget even of a summer's evening when they all go forth glorious in topsails and big new foresails.

And a word for the strong, gentle-hearted, adventurous men who form their crews: learned in the Scriptures and the sea, ignorant of the world; easy-going like all sons of the wave, lazy as the hustled business man counts laziness, but tenacious of convictions; able, very able (but not always willing) to act, ready generally to 'prache' or sing a hymn; slow to leave port, but fearless out at sea; narrow-minded perhaps, as it is reckoned by some; most kindly certainly, friendly, hospitable, and ever ready above all men to bear a hand to him who needs it upon the water. Such are my old Cornish friends, their own musical natures bitten of the old sea spirit.

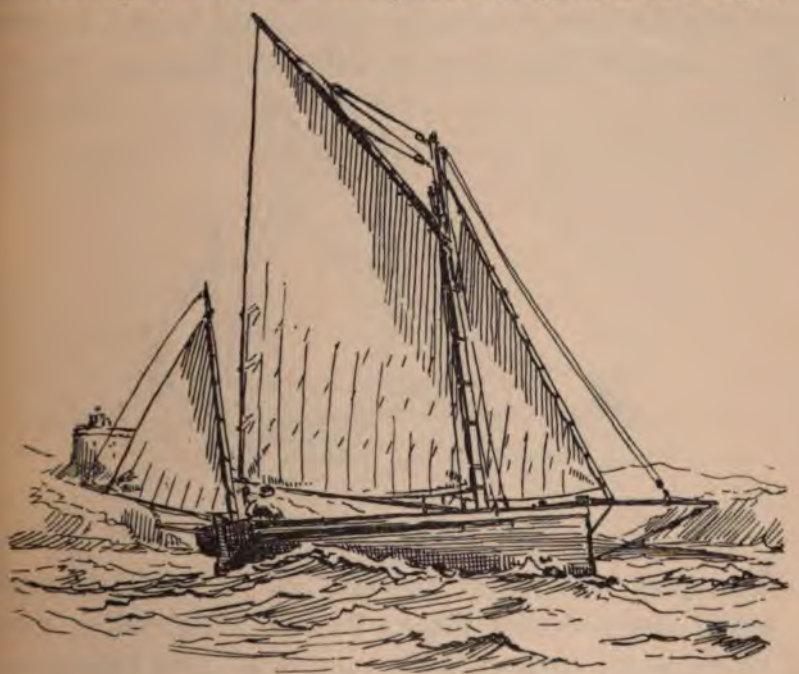
Falmouth Estuary

Just as the Solent with its strong tides and narrow channels has become the home of a fore-and-aft class of boat, so similar conditions in the beautiful estuary of the Fal, with its many creeks and winding wooded reaches, although set in the midst of a lugsail coast, have made it the home of a distinct class of deep, well-ballasted boat, carrying the gaff and boom mainsail, stay foresail, and jib.

The quiet old-world villages at the head of the many coves which lie along the indented coastline about the Fal estuary own a number of these boats varying in size and finish. Nearly all have great depth

for their length, straight stem, transom-stern, waterways along the sides, and a fore-deck extending to the mast, and very high freeboard.

Flushing, Pill Creek, Restronguet, St. Just in Roseland, and half a dozen other snug, wood-fringed anchorages, have their little fleet, lying with bow-ropes



THE FAL ESTUARY

among the primroses, and ready for use in the hundred and one ways which a waterside population with the sea instinct know. Oyster-dredging, mackerel-whiffing, long-lining, or crabbing, as the season suits, or even a cargo of wood or a pleasure-party—all have their turn. And better cut, flatter setting mainsails not even the Solent can show.

The Falmouth quay punt is the well-known class

of Fal estuary fore-and-aft rigged boat, and is used for taking off stores to ships lying in the roads of that splendid harbour, and for long-lining, crabbing, drift-fishing, or pleasuring, as the case may be.

There is nearly always a large fleet of deep-water sailing-ships lying at anchor in the capacious anchorage of the harbour, waiting for orders, and bound to and from such distant ports as Calcutta, Rio, or Sydney.

FALMOUTH QUAY PUNT—WINTER RIG

The quay punts may be seen all the year through going alongside the ships with any stores which may be required, such as beef, flour, or coal, or taking off anchors, cables, and rope. As they must go off in all weathers, they are half-decked with waterways round the large open cockpit, and are high-sided, deep-hulled boats; the winter rig is a snug and handy one, consisting of jib-headed mizen, small gaff mainsail, fore staysail set on a short iron bumkin beyond the stem. The gear and rigging are of the simplest, and can be quite easily handled by one man in any weather. For summer wear a longer mast and larger

set of sails are used, and standing lug-mizen, balloon staysail and jib set on a running bowsprit may often be seen. By reason of their straight stem, transom-stern, and very high side, and the comparatively short pole-mast preferred for going alongside shipping, these boats are not very taking to the eye. But when handsomer-looking craft begin to cry for shelter, the quay punt is just beginning to feel in her element, and to show her qualities; and whoever has had experience of these boats when the south cone is

QUAY PUNT—SUMMER RIG

hoisted, when the wind has 'dropped' or 'backed' to the south-west, and a 'rubbly' sea as they know it is running in the bay, is aware that for speed, handiness, and stiffness in bad weather there is nothing of their size to equal them. Quick in motion owing to their short ends and heavy ballasting, they seldom take any heavy water, although they throw it freely. Many hard winter blows they come through safely. The dangerous time is when they are out 'seeking'[1] off the

[1] *i.e.* looking out for ships.

Lizard. As the Atlantic depressions approach these coasts, the west and south-west winds with which they are heralded fly suddenly to the north-west and blow with great violence.[1] When caught offshore in these blows it is a hard beat up, and occasionally a quay punt has had to run away east, or has got lost, it was supposed, in the Race off the Lizard. But as a rule, with close-reefed mainsail and foresail, the quay punt stands up to anything, and will weather in against the hardest 'puffs' or squalls of the bitterest nor'-wester. At a certain angle of heel the boat seems to refuse to list further, and it is simply a case then of hanging on and not being washed out of her.

About forty of these boats are owned in and about the town of Falmouth alone. Formerly they seldom exceeded 22 feet in length, but the need for speed developed in racing off to ships has produced a bigger type of boat, and they now run to 24, 28, or even 32 feet lode-water length. The draught of a 24-foot boat would be nearly 6 feet, beam 7 feet, and ballast about 3 tons, there being generally in the newer boats a considerable iron keel. The large cockpit is used for placing stores in, and about two tons can be carried at a time in the worst weather, while in the summer-time it affords plenty of accommodation for a pleasure-party. The usual cost is from £80 to £100.

Like other Cornish ports such as St. Ives, Penzance, etc., Falmouth had a fine class of six-oared gigs

[1] Just as in the Baltic the north-wester is reckoned the most violent gale, and in one's own experience more accidents happen with the wind in this quarter than even with the south-west and south-east gales, which often drive in an actually heavier sea, but which have less sheer ferocity and hitting power.

for pilot and other duties. These boats are getting rare now, but may still occasionally be seen moving very fast with their low, long-yarded, lateen-like lug-sail set in a short forward raking-mast.

The small punts or dinghies of Falmouth and

ST. IVES GIG

other places on this coast are usually rigged with a small standing lugsail right in the bows, and a little jib-headed mizen—a very handy, light rig for any

PENZANCE GIG

dinghy for yachting or rough work, placing the steers-man well between his sails, and exhibiting fully the value attaching to a mizen for small craft in rough and stormy waters.

These little boats are generally under 14 feet in

length and are carvel-built, with a straight stem, sharp entry forward, and flat floor carried well aft. They are used for ferrying passengers and for dredging oysters and other fishing work. They are a very smart

SERVICE WHALERS

class of neatly built little vessel, and with one or two men are handled in any weather. A dozen or more may be met single-handed on the oyster-beds in the

OYSTER SKIFF

roughest equinoctial winds, kicking lightly over the flying green seas, and no finer display of fearless watermanship can be seen. One of them I once met outside, running in before a strong sou'-wester, with the peculiar sprit mainsail which the western men like, in

shape very similar to the old Brighton hoggies, with her two hands in their oilies standing up in her looking out for their crab-pot buoys. How they kept their feet as the tiny craft, with scarcely 16 inches freeboard, rolled and lurched top-heavy before that wind and sea was a mystery, and we watched them with admiration.

SPRITSAIL CRABBER

For we were being shaken off our feet by the violent plunging of our much larger craft.

This spritsail rig, which is a favourite for open boats in the west country, as it used to be in the Thames and at Spithead, has much to recommend it.

The mizen, whether leg of mutton or spritsail, is always a handy sail, and makes up for lack of a long main boom over the stern, with the advantage that it needs no looking after and does not press the boat down. I am aware that some sailors, not accustomed to the mizen, often find it an additional thing which it is a worry to have to think about; but the profes-

sional fishermen and those who are brought up to it know its value, and are aware how little looking after it really needs. The sheet can be always let go, and the sail furled standing on the mast in a trice.

The foresail, balancing the mizen, when set on a bumkin over the bows is a lifting sail, and if cut high in the foot will never hold water or press the boat down. It has the advantage of being right forward

GERRANS CRABBER

out of the way, and can be kept standing when manœuvring under oars, or working lines or pots.

The sprit mainsail is unequalled for shape and handiness if properly set. For this there must be a purchase to the grommet at the heel of the spreet to keep it well up. A couple of thimbles spliced into the eye at the throat carry the simple brail which is all that is necessary for taking in the sail. There is no boom, so dangerous and inconvenient in an open boat, but one can always be fitted if thought necessary. The sail is better without, and can be spilled more instantaneously in a squall than when a boom is used.

Although for windward work in open boats the big balance-lug, with its uncompromising lacing to the boom, is undoubtedly the most powerful in fine weather, after an extensive experience with both from the days of early boyhood, the palm for all-round handiness, and for results under all conditions, must, where open boats are concerned, be awarded to the sprit main mizen and fore-sail rig as used in the old Thames hatch-boats, in the Portsmouth wherries, and by the west-country boatmen. And no rig is prettier to the eye when well-cut and made by a good Falmouth or Penzance sailmaker, and fitted in a good centre-board boat.

The iron-bound coast of North Cornwall and Devon has few harbours of note, and the trawling of the Bristol Channel has been in the hands chiefly of the enterprising men of Brixham, who have done much to make Milford Haven a fishing-port on the west as they did Ramsgate, Lowestoft, and Grimsby in the old days on the east.

The Isle of Man

In 1870 the favourite rig of the Manx fisherman was the dandy. Quite a number of boats then owned in the island for the long-lining and drift-net fisheries had adopted the mizen from the Cornish boats which they met when visiting St. George's Channel or fishing in Irish waters. The rig before that time seems, as far as records go, to have been the smack or cutter.

In build and lines the Manx dandies were very similar to the Cornish boats, the sharp stern, full round

quarters, and straight bow being almost identical, but it is not clear how far it was indigenous to the island.

In scarcely twenty years, however, the whole Manx fleet changed into the lug rig, and by 1890 it had openly adopted the Cornish style of rig as well as build.

So far the Manx seamen had shown themselves to be capable imitators of a serviceable type of vessel eminently suited to the rough seas about their island.

MANX 'DANDY'

It did not take them long to effect considerable improvements, and in the matter of size they have far out-classed the general run of Cornish boats, running to 10 or 20 feet greater length, and proportionate increase of tonnage, length of net, and number of crew.

A prominent addition to the sail area forming a characteristic feature of the Manx 'Nickey' is the big staysail carried between the masts on the mizen forestay.

It is reasonable to inquire what has made the Manxman leave the smack for the dandy rig, and the dandy

for the lugger, thus reversing the development which has taken place at Yarmouth on the Norfolk coast, where the old luggers of the seventies of the last century have given place to the ketch or dandy, not only for trawling but also for the drift-fishing and all purposes.

The adoption of the mizen in the smack-rigged vessel is explained by its convenience for a boat lying

MANX 'NICKEY'

to nets in keeping the head to sea, and the superior handiness of the smaller mainsail over the heavier boomed sail of the cutter rig, especially where the mast was made to lower down aft, as is generally done in drift-boats.

The reasons which probably led to the adoption of the fore-and-aft rig on the Norfolk coast were pointed out above. These reasons did not exist in the Isle of Man, which is surrounded by wide seas where long tacks are made and where rough weather is the rule.

The simplest possible form of rig, with the mizen and with the least gear about the mainmast, naturally commended itself. The weatherly quality of the lugsail observed by the Manxmen in the Cornish boats had much to do with the selection, and as the Manx crews are all seamen to the bone the big dipping lugsail

CASTLETOWN 'NICKEY'

necessary in the larger-decked boats had no disadvantages to their minds, and in fact they handle it, as they do all connected with their craft, in the most fearless and seamanlike manner.

As they increased the length of their boats the Manxmen soon added the mizen staysail to fill the increasing gap between the foresail and mizen, the greater length enabling this to be done without spilling wind from either sail.

Although the sails are not always made and set

quite as well as those of the Cornish boats, and concave foot and leech are often noticeable, yet the boats are among the smartest and cleanest of our coasts, and

FLEETWOOD SHRIMPER

running to the size they do they are second to none in power or seagoing qualities.

Although some saintly mariners appear to have gone to sea from Ireland at various times between the sixth

GROOMSPORT YAWL

and ninth centuries, it is curious that the mast and sail have never been greatly developed by the modern Irish, and without doing them an injustice it may be said that they have never been a seafaring race.

St. Perran performed a remarkable feat of seamanship when he navigated a millstone to Cornwall, but I believe he was not an Irishman, although at that time sailing from an Irish port; nor do the Irish appear to have wished to emulate the performance, which seems to have been regarded as rash even in a saint.

To come to more recent times, it is true that cutter-rigged craft appeared on a map of Ireland in the sixteenth century, but this fact does not throw any greater light on Irish seamanship of the period. The Galway hooker is probably the only eminent boat of a sea-keeping type now in existence which is indigenous to the Emerald Isle, and the native genius of the race in regard to naval architecture of sailing-craft has been confined to some not very advanced lugsail boats of canoe type, such as the Groomsport yawl or Galway pookhaun. What large fishing-boats are owned or manned in Ireland have been mostly acquired from the Cornish, Manx, or Scots fishermen who frequent and fish in Irish waters.

OLD MERSEY WATERMAN'S RIG

TRAWLER OFF HAVRE

To face p. 230.

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CHAPTER VIII

FRANCE AND THE MEDITERRANEAN

FROM the flat sand-bound coasts of the Low Countries, where the bluff-bowed Dutch craft sail, we may now turn westwards along the French shores.

OFF BLANKENBURG

Leaving the West Scheldt and the countries of the leeboard, the spritsail, and the long vane aloft, the carvel-built hulls and square-cut lugsails of Northern France are reached. They will be found to join on by

degrees with the higher-peaked, shorter luff lugsails, which again will lead on eventually to their parent, the long-yarded lateen of the Mediterranean.

Off Blankenburg, in Flanders, the local fisherman still wears his leeboards, but here the standing lugsail is first seen set in the French style; the mainsail tall and square-headed, and the foresail set on a light mast right in the eyes of the boat. These local men set their foresail luff taut with a spar bowline, like that used

OFF NIEWPORT

in setting their lugs by the Malays, and formerly by the old Scotch 'Skaffies.'

But off Niewport, a little further west, the familiar French three-masted lugsail rig may be seen. Main and fore lugsails set on masts stepped amidships, and right forward, now become the ordinary working sails; a mizen, a running bowsprit and jib, generally of very equilateral cut, being commonly added, with a main topsail on the mainmast pole in moderate weather.

This rig, descended probably from the old three-masted felucca of the Mediterranean, was, as already mentioned, a favourite one with the French armed craft of the Napoleonic wars, and was adopted and

used until recent years on certain portions of our east and south coasts, at Yarmouth and Hastings, but it

OFF CALAIS IN A DECEMBER GALE

seems never to have taken strong hold of British seamen.

The rig has the advantage of being easily reduced to snug proportions, while it offers a fine spread of

HAVRE TRAWLER—SMALL SAIL

canvas in light winds, an especially useful feature in trawling.

For the drift-net fishery, a number of boats hailing

from Calais, and the smaller ports along the coast westwards round Grisnez, utilise the English form of two-masted lug rig, with main and mizen lugsails and jib, similar to the modern drift-boats just across the Channel at Brighton or Hastings.

The French boats are, however, as a rule easily distinguishable from the English by reason of the

TRÉPORT TRAWLER

square cut of the head of their lugsails and the equilateral form of the jib.

The English and Scotch fishermen, during the last half of the nineteenth century, found that the sharper the peak the better the set of the lugsail on a wind, and there is no comparison between either the cut or the set of the average lugsail, north and south of the Channel.

In the same way, the English jib is longer in the

and shorter in the foot, and is at all events to the customed eye a prettier-looking sail than the equal-ded triangle presented by the old-fashioned jib of the rench, both on the Atlantic and the Mediterranean aboards. This shape appears to be largely a result f the low foremast-head and the length of bowsprit sed with the lateen and the French-cut lugsails.

The Tréport trawler, the Normandy chasse-marée,

NORMANDY CHASSE-MARÉE
(FROM A SKETCH BY SIR W. WARRINGTON SMYTH)

and the fishing-fleets as far round as La Rochelle, show the French peculiarities very clearly. The foresail often has a bonnet on it for lightness in bad weather. The unlacing of the bonnet reduces the sail and avoids the weight and danger caused by heavy rolls of reefs soaking in a heavy head sea, which in this rig would often be a serious matter owing to the forward position of the foremast. The foremast occasionally, in the larger craft, has a long pole for a topsail in fine weather, especially for trawling purposes; and two or more jibs

and standing bowsprit are carried in the bigger chasse-marées. The St. Malo boats are even seen in calm weather with light upper topsails set over the usual lug topsail.

Some of the beautiful two-masted luggers which may be seen sailing out of Havre and other ports, have

OFF LA ROCHELLE—TRAWLER

adopted a higher peak and proportionately shorter luff with great advantage; and with their neat sharp sterns, boomed mainsails, and tall spars, they are not only fast and safe, but also a very handsome type of boat of which any seaboard might be proud.

This three-masted lug rig, with local variations (as for instance the omission of the mizen, the addition of a boom to the mainsail, or otherwise), may be said to be the national rig of France, and is retained in all

forms and sizes of craft from men-of-war boats to traders of several hundred tons.

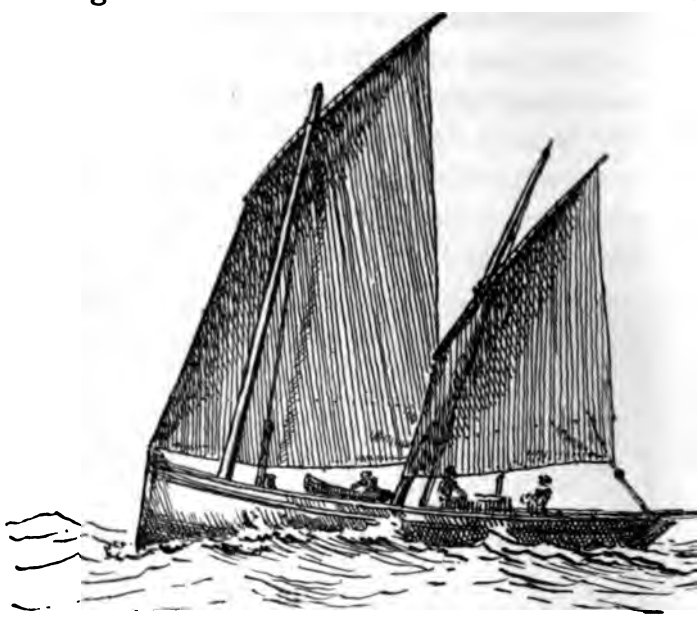
At Douarnenez and neighbouring ports fronting 'the Bay' a fine class of drift-lugger is used, having many of the characteristics of the Scotch 'Zulu,' such

HAVRE TRAWLER

as straight stem and sharp raking stern-post. The rig consists of a dipping lug foresail, set on a very raking mast right forward, with a main or mizenmast, with great rake aft, stepped nearly amidships, on which a very sharp-peaked sail is set.

The gaffsail has made progress in certain parts,

and not a few ketch-rigged trawlers often purch
in England are now owned across the Channel;



OFF DOUARNENEZ

the national standing lug, main and fore-sail,
to be likely to hold their own for many years to

SAINT-JEAN DE LUZ

In the men who handle these vessels Fran
again that reserve store of industrious, uncorr

[illegible]d fearless men which, in her case especially, owing [illegible]o the diseased nature of much of her civilisation as

ST. MALO LUGGER, WITH UPPER TOPSAILS

represented in her fickle capital, constitutes a treasure of immeasurable value to the nation.

GUERNSEY PILOT, SNUGGED DOWN

If Paris, as has been said, is a standing peril to France, it is her country-folk, and above all her

seaboard-men who, by their virtues, have her safety and her greatness in their keeping.

Long may France be able to turn to the intrepid and great-hearted men of Brittany and Normandy in the day of struggle and adversity. It is such men that make the true inward stuff of any nation, and to such that France owes that marvellous recuperative power which is the admiration of all, and the astonishment of those who do not know their France.

The Channel Islands fishing and pilot boats formerly

CHANNEL ISLANDS BOAT

had their three masts all rigged with the standing lugsail, French fashion. They have now, however, pretty generally adopted a boomless gaffsail with considerable peak and good cut, set on the same mast-plan, in place of the lugsail proper.

Some of these boats are very fine powerful craft, and much they need to be good sea-boats in the wild seas and strong tides about the islands. In light

weather the big sail-spread obtained by the three-masted rig is no less necessary to give them way across, or against, the strong currents which make sailing anything but unalloyed pleasure in these dangerous rock-strewn waters.[1]

The Mediterranean

Probably no sea in the world leaves such an indelible mark upon the mind of the navigator as does the Mediterranean. The long Pacific roll, the winter grey of the Atlantic, the hot rain of the Indian Ocean, or the fury of the China Sea, are written on the worn paint of the hulls that battle them, and on the hearts of the men who brave them. But the Mediterranean in its deep summer blue, or in the low lights of winter, in oily sunlit calm or the haze of the chill mistral, has a way of its own, a fascination, a fickleness, and a beauty which are irresistibly attractive. The sense of colour, the charm of contrast are nowhere so potent. The constant presence of bold outlines, of peaceful natural harbours, of all that is bright and striking in tint and form, and the need for constant vigilance which the neighbourhood of bold land-falls in a treacherous sea demands, combine alike to exercise to the full the powers of observation, and to impress the mind of the sailor. Other seas of the world mark deep the heart of man, but the Mediterranean appeals to all his senses, and writes most upon his memory.

Behind its physical aspect lies always the wonder of its historic past. The dim vista of man's struggle from empire to empire unfolds itself along these much-

[1] Approximate dimensions: 36 ft. by 12 ft. by 8 ft.

navigated shores. Pictures of one knows not what quaint sea-craft, in which the old mariners piloted from point to point, arise in the mind's-eye. Again, the many-banked galleys of Tyre, or of Athens, the high-sided corn-ships of Rome and Carthage, or the gaily-

TUSCAN FISHING-BOAT (FROM A SKETCH BY W. ROBINS)

coloured merchantmen of Genoa and Venice, seem to sail out of the mirage in the hull of some humble tunny boat with the rising sun astern of it.

And surely of all its wonders the most wonderful, and a striking tribute to the little distant Isle of Britain and its people, is the fact to be writ in future histories, that for over a century this sea of memories,

which has seen peoples and empires rise, rule, and wane, should have been an 'English lake,' won, patrolled, and kept by the English fleets.

It is noteworthy that positively nothing of the ancient Egyptian, or even of the classical Roman, seamanship or methods of rig or construction appear to survive in the Mediterranean, or even in Egypt itself.

More especially since the oar-propelled galley has

GULF OF GENOA

become extinct, it is left to the Far Eastern seaman alone to revive memories of the seamanship of the ancients by a conservative retention of a few very ancient devices known to the older civilisations. These, doubtless before they were swept away, the ancient Mediterranean seamen communicated to, if they did not actually derive many of them from, the peoples whom they met across the Indian Ocean.

We know that the Egyptians equipped fleets for

the East in the reign of Rameses III. or about 1200 B.C., and that the Phœnicians circumnavigated Africa at the beginning of the sixth century before Christ, under orders from the Pharaoh Nekan. These voyages probably account for the similarity of many devices found in our records of ancient Egypt to those which are still in vogue with the conservative Eastern seamen.

Our records of the development of seamanship and shipbuilding in the Middle Ages are meagre, but the

PROIDA

oar, which was so greatly relied upon by the Greeks and Romans, remained in the Mediterranean the principal form of propulsion. In that sea of frequent calms and squally winds such a mechanical form of propulsion was of the utmost value where speed was required, and except in the larger merchantmen, the sail was only an auxiliary even to recent periods, when the mast and sail had long been fully developed by the nations of North and Western Europe.

At what period exactly the squaresail of the Egyptian and classical seamen began to give way to

the lateen, now almost universal for small craft in the Mediterranean, is not clear, but it seems to have directly followed the Mohammedan incursions.

That the lateen was generally adopted in square-rigged ships during the fifteenth century, for the mizen sail or driver, on account probably of its superior

BRAGAGNA (AFTER E. W. COOKE, R.A.)

set for holding the wind in staying, we find from several drawings of that period, and it became definitely the rig of the Venetian galleys of the sixteenth and seventeenth centuries, in place of the classical squaresail which had been retained until that period, and of which we have records in the galleys as late as the fourteenth century, disposed as in the time of Pliny, on fore, main, and mizen masts.

The squaresail was still in use in the Venetian galley of the fourteenth century, but the galleass class which fought at Lepanto in 1571 had three masts, all of which were rigged with lateen-sails.

From some old drawings of men-of-war of the sixteenth century,[1] it would appear likely that the lateen

SPANISH AND ARAB GALLEY (SEVENTEENTH AND EIGHTEENTH CENTURIES)

driver or spanker in North Europe was developed as a result of the tip forward given to the lower square-sail yards in cases where the line of the deck from the high poop to the waist was pitched very steep. The sail became practically a lugsail in this position, and when the fashionable angle of pitch of the deck became much flatter, the advantage of the better set of the sail in this position was retained by cutting off the lower fore triangle.

[1] *e.g.* one of a British man-of-war, 1588, given in Holmes's *Ancient and Modern Ships*, from the tapestries of the old House of Lords.

The *Henry Grace à Dieu*[1] had lateen topsails on her two aftermasts, and also a lateen topgallant sail.

Whatever the immediate cause of the use of the lateen in the ships of Northern Europe in the fifteenth century, which later on developed into our present fore-and-aft gaff and boom sail, it seems probable that the Mohammedans already possessed it,

COASTER—MESSINA HARBOUR

probably in the shape of the present dhow-sail, at a much earlier date.

Wherever the sailors of Arabia penetrated either east or west, in the Indian Ocean or the Mediterranean, the lateen followed them and remained. Wherever, on the other hand, the Mussulman wave did not break, or the Arab seaman failed to secure a footing, as was the case in several parts of the Indian Ocean, there apparently remained unaltered many of the oldest devices known to shipmen, and consequently, in look-

[1] Launched in 1814.

ing for survivals of Egyptian or classical practices, we have to turn eastward to inland waters of India, to Burma, to Siam, or even China.

Down to the seventeenth and eighteenth centuries the old galley under various forms remained the most characteristic of Mediterranean craft.

The term is the old γαλαία or γαλέα which was applied to the single-decked rowing-vessels which succeeded the earlier many-banked ships of the Greeks and Romans, and which were introduced as a result of the success of the famous Liburnian galleys which won the battle of Actium.

Even to the early nineteenth century these vessels were common, and the name of galley[1] was still applied to single-decked vessels used for pulling or sailing.[2] They were used with the felucca rig, and were a favourite class wherever men enough could be obtained to man the oars.

As would be expected in a sea of such sea-memories, the Mediterranean offers at the present time an unending variety in the craft which sail its waters. In interest, in beauty, and in serviceableness they are second to none in the world, and if ever exhaustively dealt with they would furnish material for a lifetime's work for a Cooke, a Dixon, or a Wyllie.

The Western Basin

Every visitor to the Riviera knows the high-stemmed shoreboat with the round sharp stern and the

[1] This is almost the only classical boat-name which survives, with the exception of γαῦλος, a form of Phœnician trader from which possibly our Norse term yawl is derived.

[2] Admiral Smyth's *Sailor's Word-Book.*

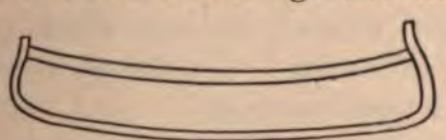
long-yarded lugsail or lateen which, with minor variations, is used from Alicante to Alexandria; and many will have noticed the sleek sides of these boats, which are carvel-built, as sailors say, in contradistinction to the strong, light clinker-build of the north.

Along the Spanish and Riviera coasts these boats have particularly well-built sterns, with great breadth

PORTUGUESE COASTER

carried well aft at the gunwale, giving them great buoyancy and carrying-power.

The profile of the hull is generally peculiarly like that of the blade of certain figure-skates, the stern



and stem posts having a 'tumble-home' at the gunwale, and curving gently into the keel which is itself

considerably rockered. The shape is eminently suited to boats which are continually beached in a heavy surf.

The sail *par excellence* of the Mediterranean is the lateen. As noted above, this form of lugsail (for such it is generically) is of Moorish origin, or to be more accurate, it is the adopted sail of the Mohammedan, for as to its true origin there is no evidence at present.

LEGHORN COASTER

Its wide spread from the Ægean to the Atlantic is evidence of the influence which Mohammedanism has exercised upon modern navigation in these waters.

The usual rig of the coasting trader, familiar in all the charming natural harbours along the Spanish, French, and Western Italian coasts, is the one-mast lateen with bowsprit and jib.

A light topmast is often carried, upon which is set a jib-headed topsail, sheeting to the lateen-yard about a quarter of its length in from the peak. The bowsprit is

so often a long high-pointing spar, upon which one or more outer jibs may be set beyond the usual big equilateral staysail or jib now in general use with the lateen.

The handling of the big lateen mainsail is a science by itself, and may be recommended as an experience likely to bring life to any jaded soul seeking for sensation.

The yard, which is in two or more parts according

GIGLIO TRAWLER, BEATING

to size, spliced or 'fished' together, is hoisted by a halyard which passes in two parts through a pair of masthead sheaves. A four-fold block and a stout rectangular sheave built into the deck, just abaft the mast and standing some feet above the deck, form the tackle for hoisting and lowering the sail. A running parrel holds the yard into the mast. There is generally a peak halyard to assist in taking a portion of the weight off the yard, and in peaking it to the required angle; but the set of sail is really controlled by the heavy

tack-purchase at the heel of the yard and by the main-sheet. In running free a wonderful lifting-power is given to the lateen by taking the sheet forward and letting the tack-purchase run out; the yard then lies across the ship, the triangle being upon its apex, the peak dropping and the tack rising until the strain on

OLD GENOESE VINCO, 1845

the sheet is about equalised. Where a jib-headed topsail is set above the lateen-yard this cannot, of course, be done to the same extent as in the smaller fishing-craft which have but little gear aloft.

When close-hauled the heel of the yard sags out to windward in a way which is at first somewhat embarrassing to the fore-and-aft sailor. Its right posi-

tion is formed, however, when the sheet is into the required extent, and the strain along the foot of the sail asserts itself. The tack tackles are used to prevent the yard from swinging, which it does with considerable violence in a seaway when the peak is being subjected to a series of wild oscillations; one tackle is brought aft and the other forward, or they are spread athwartship as may be necessary as a result of the position of the yard or the direction of its movement.

TRAWLER, OFF ELBA

The sail is as a rule taken in by being furled to the yard, two or more brails being used in the first instance, to spill the wind, the canvas being then furled and tied by a hand upon the yard. The difficulty of the process naturally varies with the size of the vessel, but even in a moderate sea, furling a fifty-footer's lateen sail is no fun if you have had no practice at it and are not possessed of prehensile toes.

The virtue of the lateen, which at first sight seems so ill-suited a sail to such squally coasts as those of the Mediterranean, is that it can always be let go with

a run in a heavy blow; and my grandfather, who did many of his first surveys of that sea in a lateen-rigged *paranzello*, used to speak with emphasis of the handiness of the lateen in this respect. At the same time, the yard is long and inconvenient on deck, and it is better generally to keep it off the deck if possible. In many of the Italian coasters regular chocks are fitted

NAPLES TRAWLER

to receive the long-yard when lowered in bad weather, and a small storm-sail ready bent upon its yard is carried on the opposite side to the big sail all ready to be hoisted when the other is secured in its place.

The tricks which the skilled lateen-sailor plays with his sail are endless, and can be best seen among the trawlers off the Tuscan coast, where, to suit the varying strength of the wind, upper and lower spinnakers

are set at one moment, and the next the big mainsail is being skilfully emptied of half its wind. When the trawls are hauled the yards are allowed to swing out forward and are brought on deck. No little experience is necessary to keep the sister boats working together on a trawl-net at exactly similar speeds as the changing puffs of wind come up astern, and there is no rest with the sheets or with the small auxiliary sails which are

SQUARE TOPSAIL LATEENER, 1841

constantly being eased or tautened, hoisted, 'spilled,' or taken in. Only the trinchetto sails of the Tagus *muleta* exceed the Tuscan fisherman's in number and variety. But these boats are most beautiful when bending close-hauled to a stiff breeze on the beat-home, when their weatherly qualities will delight any sailor.

My father, who at one time used one of the smaller Tuscan fishing-boats for a cruise of some months' duration, used to speak with pride of the power of his little craft to carry sail in strong winds; but he was un-

fortunate in his crew, which consisted of two men who, whenever it blew hard, first of all besought him to run for a port, and when he refused used to get out their rosaries and go upon their knees in the lee-scuppers, where they remained praying and crying until driven out of their retreat by an opportune green-sea. But these were longshoremen, very different from the generality of Italian fishermen, who are probably the

MOLETA SAILS (TAGUS, 1861)
(FROM A SKETCH BY PROF. STORY-MASKELYNE)

finest mast and sail men of the Mediterranean at the present day, and whose one-masted luggers from the Adriatic coast may be seen as far east as the shores of Egypt.

From the records of the Mediterranean during the beginning of the last century, when, for the first time since the Crusades, it began again to be a sea known to British sailors, it is evident that the old three-masted settee or felucca rig, the rig *par excellence* of that sea,

was then far commoner in comparison to others than is now the case.

SPANISH FELUCCA

The reason is not far to seek. At that time the old methods of warfare were still in vogue, and the three-

GREEK FELUCCA PRIVATEER (FROM AN OLD PRINT, 1819)

masted lateen rig was well adapted to long vessels of easy lines and low freeboard of the galley type, which could be propelled at considerable speeds in calm

weather by a large crew of rowers. For warlike purposes they were used by the old Venetian and Genoese sailors of earlier centuries, by the Moors on the Barbary coast, and by the Greeks during the war of 1819, as well as by all the great sea-fighting nations for their small craft during the Napoleonic wars.

For large cargo carriers and for warfare, steam has

OLD BRIGANTINE (TORRE DI RIO, 1841)
(FROM A SKETCH BY SIR W. WARRINGTON SMYTH)

taken the place of the old long sweeps, and the sail remains for the small coaster and the fisherman where economy in crew is necessary, and seagoing and carrying capacity are required as far as they can be made compatible with restricted size.

For large-sized coasters, therefore, the ordinary fore-and-aft or topsail schooner and the ketch rigs are often seen on the coasts of Italy. In the Adriatic especially, the two-masted lugger is a very frequent friend.

As late as the forties and fifties examples of fair sized three-master lateens were still common—in the beautiful *bragagna* of Dalmatia (a true felucca, or rather settee in build and rig), in the brigantine shown off Torre di Rio, and in the peculiarly rigged *velocera*, which are both from sketches by my father.

The last-named is a development of what used on the Barbary coast to be known as a *xebec*, which was

OLD VELOCERA (ELBA, 1841)

a *felucca* with square yards on the foremast. It was a rig which gradually came into favour for larger vessels, the main and mizen masts retaining the lateen yards.

Not a few old drawings show that the square topsail was very frequently set during the last century over the lateen, as was done over the gaff mainsail of our old smacks. This was not only the case in the felucca-rigged vessels on fore and main masts, but also in smaller *paranzellos* and others.

But as in northern countries the fore-and-aft jib-

headed topsail has replaced the upper squaresail, so it has happened in the Mediterranean, and the jib-header is seen even over the lateen yard.

The three-masted, or settee rig, without topmast, is still retained in parts of the Mediterranean: one may instance the big coal-carrying *gaiassas* of lower Egypt, and some of the fruit-carrying and other long narrow-built boats in the neighbourhood of Naples.

NEAPOLITAN FRUIT-BOAT

The mizen is undoubtedly less common at the present day with the lateen-sail than it was during the first half of the last century. At Genoa, Leghorn, or Naples, the rig depicted in the Genoese *bovo*, and that of the *paranzello*, are seldom seen, the one-mast rig being the commoner. In some cases a fore-and-aft mizen instead of a lateen may also be met with. It is not easy to account for the lack of popularity of the mizen, as the lateen mizen is easily handled in a wide-

sterned boat, and would be very serviceable in hard weather.

For sharp-sterned boats, however, such as the majority of the present small traders of the western basin and the Adriatic are, the mizen has its inconvenience if carried, as must be the case with the lateen mainsail, right aft on the taffrail.

FLYING TOPSAIL, SPANISH FELUCCA

It will be noticed that the lateen-sail of the Western Mediterranean differs considerably in shape from that of the Indian Ocean and Red Sea. It is only in the smallest boats that the forward angle is cut off so as to make a piece of square-cut luff. The Arab lateen is almost invariably so cut, and the sail is in truth a four-sided one. Its disadvantage when so cut is apparent

on a wind, when a straight luff is more difficult to maintain, and the heel of the yard is inclined to take charge in a seaway because less controlled than it is by the Mediterranean tack tackles. It appears to be tradition that the old settees, small single-decked vessels of the felucca rig but without topmast, generally carried sails of the quadrilateral Arab pattern.

But the sail of the big lateener of the western basin is usually more nearly an equilateral triangle than that of the dhow, and it is more sober in the amount of

SCANDALISED

peak given to it. The lateen, which is more exuberant in its peak, is of course that of the inland *gaiassa* of lower Egypt.

The western lateen always remains on one side of the mast, and is never shifted for a fresh tack. Its shape enables it to stand inside the rigging of the mast, and not outside at the extreme masthead as is necessary in the case of the Arab *gaiassa*, as a result of the cut of the sail and its high peak. The western lateen is thus far more snug to the mast, and more easily lowered on deck, and is certainly a more seamanlike

and weatherly sail, while it is always made of stout material cut and roped after the European style.

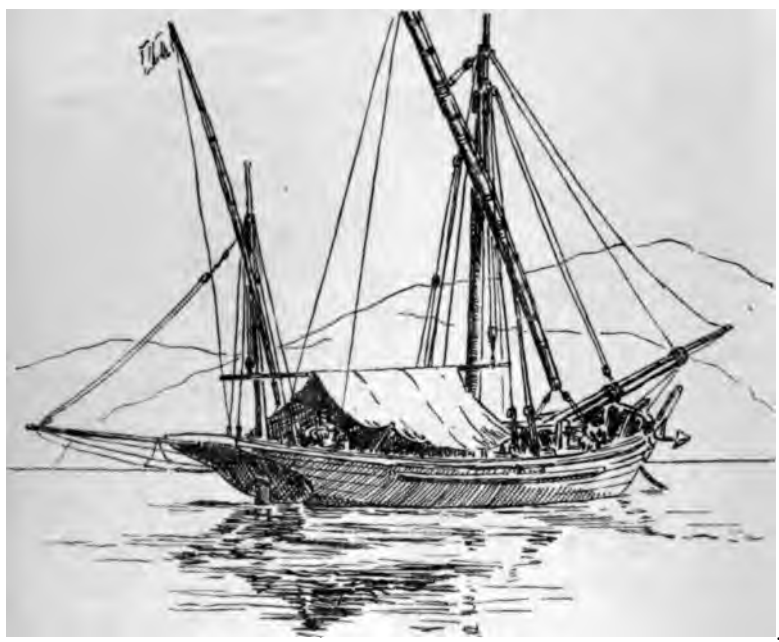
A peculiar form of fore-and-aft mainsail, reminding one of the 'curtain' spritsail of Smyrna and Turkey, is that on the mainmast of the *velocera*, which is still frequently met with in a number of coasters in the Gulf of Genoa and the Tyrrhenian Sea.

COASTER (GULF OF GENOA)

The gaff is kept standing, and is a very long spar hung from one-third to one-half of the mast's length below the heel of the topmast; the mainsail is hauled out along it, when set, and travels on rings to the peak halyard slings. The peak is controlled by vangs going to each quarter, and no boom is used.

In conjunction with this low-cut mainsail is a huge jib-headed topsail which hoists on mast-rings up the topmast, but is also laced along the portion of the

lowermast which intervenes between the gaff and the heel of the topmast. When this topsail is taken in, the mainsail left standing is about equivalent to an ordinary sail with three reefs down, and is certainly snug enough for most purposes. This convenience is gained at the expense of a plan of sail-spread which is



BOVO (GENOA)

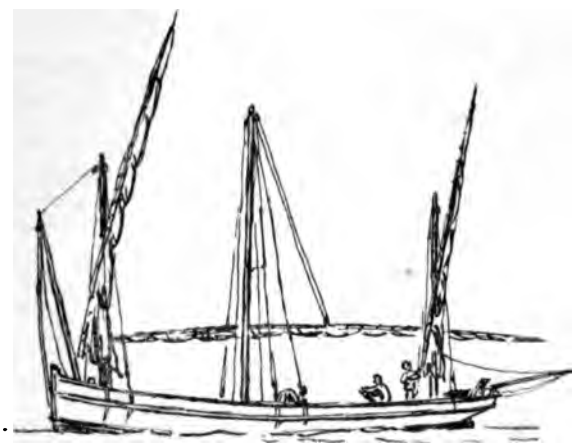
far less efficient in ordinary weather than that of the ordinary long-hoist fore-and-aft sail and topsail.

With this sail the mast is always given considerable rake aft, and while the lowermast is long, the top and the topmast are both rather short. The whole has rather a topple-over-stern air which does not impress the stranger.

Though seldom met with in three-masters at the

present day, this arrangement is generally seen in conjunction with the very old style of foremast, placed right in the eyes of the ship and raking over the bows, upon which the old galleys and feluccas used to set the fore lateen.

While the position of the mast, the old *trinchetto*, has been retained, the heavy lateen yard has been in these vessels taken off, and a large main staysail, set along a stay from the maintop, is substituted.



THREE-MAST LATEEN (NAPLES)

The first record which I have been able to find of the use of this peculiar form of staysail is in a sketch made by my father in 1841, in the neighbourhood of Elba. In this case it is shown fitted to an ordinary felucca-rigged boat, the staysail taking the place of the fore lateen, it having been apparently introduced as a storm-sail, when the fore yard was lowered on deck in order to reduce weight of top hamper.

The bowsprit, taking the place of the old overhanging bow, to which the tack of the lateen worked,

remains in the modern rig in order to carry a jib necessary to give the required head-sail in ordinary weather.

The staysail is of the four-sided type now in common use in square-rigged ships, and is fitted on the foremast with mast-rings. It is a handy sail with good lifting power, easily set and stowed; its centre of effort is low, and it involves no weight of spars aloft. But it is not remarkable for beauty, nor for flatness of set when close hauled, the upper fore angle being difficult to fill effectively on that point of sailing.

Lying in harbour, these vessels at first appear to have a set of very solid jib-booms all 'on end,' but a closer inspection shows that what appears to be a jib-boom is in reality the old-fashioned foremast of history still surviving.

This peculiar rig is largely an outcome of the meteorological conditions prevailing in the Gulf of Lyons and Tyrrhenian Seas, which alternate between calm *bonaccia* weather, occasional *raggiature* or land squalls, and the fierce, cold *mistral* from the north; or again the *labeschades*, south-westerly gales of great violence, which blow home with a big sea of short range and very destructive power.

The Adriatic

The Adriatic provides a new rig to the sailor, for here is the powerful and flat-setting boomed Italian lugsail, which is seen alike in the *trabacola* or coasting trader, and in the gorgeous-sailed *bragozzi*, which is familiar to all lovers of Venice and its colouring.

The weather in this sea is notoriously unstable, and

the harbourless condition of the greater part of the Italian coast has rendered it absolutely necessary to use a powerful rig capable of working out to windward off a lee shore. Both with the *siffante* or south-wester, and with the *bora*, the heavy, westerly blast which has dismasted so many good ships, sudden shifts of wind take place, followed by squalls of such violence and fierceness that a snug sail-plan and a powerful build of hull are alike essential.

TRABACOLA

The burst of a *siffante* on this coast is a thing not to be forgotten. It is a hot morning, and the sun flashes off the windows of the distant city, which bears a little south of west. A long swell comes up from southward, where a bank of threatening cloud lies, the upper edges lit up like the summits of great snow-peaks. We lie up close-hauled on the port tack to a light air from south-west. The aneroid has fallen the part of a tenth since our morning dish of maccaroni,

which, by reason of the swell and the hot sun, was perhaps not greatly appreciated. It is consequently with much impatience that we feel the roll, and long for wind, and eye the threatening horizon. A dull film of cirrus brings a haze over the sky above us, and the whole world seems to silently threaten us with some terrific peril. Not long after, the wind suddenly comes among a few spasmodic white caps on the sea, sighs

ANCONA FISHING-BOAT

through our rigging, and is gone again. Our close-reefed lugsail bangs about over our heads, and strains every rope and strand aloft. Then it comes, first a puff abeam, then one nearly right ahead, and steady and stiffening minute by minute. Night seems to settle down and cover us up. The great strong bow breasts through the short breaking seas, but the force of the wind presses her down until all our lee side is awash, and the mast is at such an angle that the foot of the sail is becalmed by our weather gunwale. We are

making terrific speed, but taking in water everywhere. In the midst of this, and when we are beginning devoutly to wish we had a less heavy boom and roll of reefs to our sail, the mole of the harbour appears soused in heavy sprays under our lee. Gently and cautiously the sheet is slacked away by the strong-

AT ANCONA

handed crew. The few minutes' run is desperately exciting, because we are sailing by the lee, and a gybe is imminent. A steep, fierce sea, showing its angry white teeth, seems to spring down upon the starboard quarter, the main-sheet suddenly falls in folds into the water, and with a bang like a gun's the sail sweeps across above our heads. The sheet and tack part simultaneously, and the sail lies in a bag, pinned

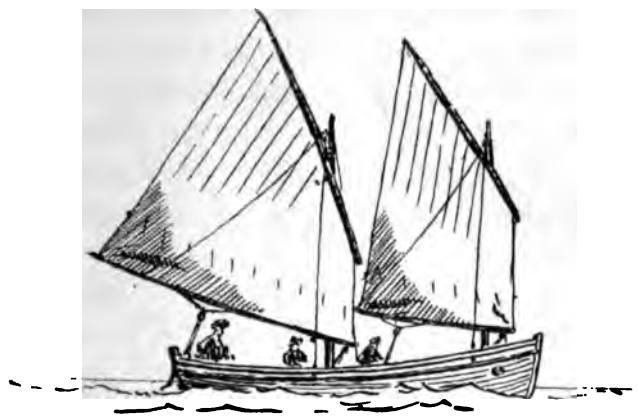
by the gale in the rigging. However, it is a few moments more into the lee of the mole, where with a short sweep we round into the wind's eye. For a few minutes the sail has charge aloft, but as everything is slacked up, it is got in without having broken any arms or legs, as it seemed determined to do. Before night the sun is shining along the low, cloudy sky, and the wind is hard, but moderating. To tell the truth, we felt mighty glad we were so near

ITALIAN FISHING-LUGGER (PORT SAID)

the land, for, while it lasted, there was a fierceness in it, a driving, hitting power which seemed uncanny, and which left us feeling surprised, bruised, and mystified, especially those of us who were new to Eastern seas. The paralysing power of a strong wind, which grips and holds down the limbs, and overpowers the brain, and the stinging, vicious onslaught of the hard, salt spray ceaselessly slapping the eyes and face, if continued for many hours, are able to conquer the stoutest will, and are the direct cause of many a sea tragedy. It is at such a time that one feels their pitiless strength, and

realises why so often shipwrecked crews are unable to do anything to save themselves.

The typical Italian lugsail seen in the Adriatic, and from thence carried to the far corners of the Mediterranean by its enterprising seamen, is what we term a balance-lug—a Chinese lug without the battens, laced to boom as well as yard, and when hoisted 'set up' by the tack purchase.



SHIP'S-BOAT, WITH ITALIAN LUGS

To prevent a 'back sail' against the mast, and to ensure flatness of set, the Adriatic or Italian sail has its tack purchase brought to the deck at some distance away from the mast.

The *bragozzi*, stern on, and the *topo*, or mouse, of Venice show this peculiarity. If the sail is hoisted on the starboard side of the mast, the tack purchase comes to a point about midway between the line of the mast and the starboard gunwale. I am not aware that this method of setting down the tack of the lugsail is adopted anywhere else.

Of the Adriatic sailing-craft, the best known, because the most seaworthy, and the one which carries the largest proportion of the coast trade, is the two-masted lugsail *trabacola*.

The high bow, the round stern, and the deep rudder hung on the stern-post outside the vessel, are characteristics of this as of most of the purely Mediterranean types of craft.

The mainsail is set on a mast stepped well inboard,

ITALIAN COAST LUGGER

and although generally smaller in actual area than the foresail, it has the power of a mainsail rather than of a mizen. It is of standing-lug cut, and the luff is generally set taut by bowlines.

The fore-lug is more of the character of a balance-lug proper, for it has a considerable length of boom and area of sail forward of the mast. The tack-rope is often so slackened up as to allow a large portion of the sail to swing out forward, giving the sail an odd appearance, suggesting that it requires setting up; but on certain angles of wind it is considered to draw better

when thus set. The pilot-boats of Alexandria are rigged in this fashion, and it is an excellent rig for open or ships' boats which require short spars and modest sail-spread. But they would be the better in general for a light bowsprit and jib on most points of sailing.

The bowsprit of the *trabacola*, like so many of those in the Mediterranean, is topped up at a high angle, and carries one or more jibs.

ADRIATIC LUGGER

These boats are of beautiful lines and great power, and constitute one of the finest forms of sea-going luggers in the world.

Another form of lugger very similar to this occurs in the big two-masted traders of the Spanish coast, which appears to be an outcome of the same ideas, and like the two-masted lateen *felucca*, also in use there, it shows evident connection with the general mast and sail plan adopted by the French and other Latins.

They both carry the somewhat long-yarded but square-headed lugsail which the southern races often substitute for the lateen. Both show the same tendency to obtain the balance of sail by placing the foremast right forward, and setting a lugsail upon it, sometimes a little larger even than the mainsail, thus avoiding the need of the stay foresail so generally

IN THE LAGOON

adopted by the northern races, who place the forward mast well back from the stem-head. The bowsprit and jib are modern adjuncts both with the Norse and the Latin races, and only came into general use during the nineteenth century. The jib has proved itself so useful a sail that it is now almost universal with lateen and lug-rigged vessels alike.

The Venetian boats are remarkable for the very slight draught forward, and consequently they carry the

centre of effort of their sail area very far aft. Many of the small fishing-craft, like the *topo*, may be seen sailing with what looks like a large mizen, only stepped well inboard. At first one feels a keen desire to present their owners with a foremast and headsail after the usual proportions. But further consideration soon

BRAGOZZI

shows that the sail is correctly placed relatively to the centre of lateral resistance, which is much further aft than in most boats.

The insignificance of the foremast and foresail of the *bragozzi*, and the importance of the large, gaily coloured mainsail, are due to this cause.

The *trabacola* and other deep-water craft have necessarily far more underwater body forward, and

thus can carry a sail-plan more suited to sea-going purposes. But the light craft of the Lagoon of Venice are of the flat-bottomed, mud-larking type, capable of navigating shoal-waters with a minimum of draught and a maximum of carrying power. Wherever their owner

SAIL PATTERNS, VENICE

can wade they must carry him and his wares or his fish. Deep channels are far between. And they are quick to turn with the stroke of a long oar, light to move by an air of wind or by a pair of arms, steady to carry heavy weight of goods, and not to flinch at a squall of wind, and at the short ripple which soon gets up in the wide Lagoon waters.

What beautiful memories that little *topo* under ail brings back! The wide grey waters under a grey ky, rimmed by low grey islands and tall grey towers; or the sparkling blue of a sunny day, with the far city, so long unchallenged mistress of the sea-world, in all its colouring, and the snow-white, distant range, on the far sky-line; the lapping of the tide along the piles,

BRAGOZZI

nd the cheery voice of my friend Antonio instructing ne in short cuts across the flats, the character of his riends, or stories of the days of the old Republic's reatness.

The big single-mast lugger of Ancona and the outh is in build a smaller *trabacola* fitted with one nast in place of two. Her big mainsail is of the same

pattern as that of her big sister, and her bowsprit

TOPO (VENICE)

stands up at the same truculent angle. Capable,

TOPO (MOUSE)

wandering sea-boats, they are to be seen heading up

a *gregale* off Malta, or away down east running with dry decks before the long roll of a Levanter.

The Eastern Basin

The Italian form of lugsail takes us among the modern Greek fishermen, who use it in many of their sponge-boats and other fishing-craft, and in their small traders of the Archipelago.

But the Greeks, although they built and fitted out

GREEK LUGGER

quite a fleet of felucca-rigged privateers in the early wars of the nineteenth century, are not really sailors at heart. Our own seamen in times past had a very poor opinion of the seamanship of the *pukka* Greek, and a naval officer who spent three years of one commission in and about the Aegean, declared that he could never get any information out of a Greek pilot except long lists of omens foreboding bad weather, or of ports to run to when the wind should freshen up.

It must in justice be admitted that navigation

under sail in small craft has its drawbacks in a sea where the wind, even in weather of an apparently settled character, is liable to such sudden shifts

BRINDISI LUGSAIL

as is here the case. The sheltered anchorage of one hour is a dead lee-shore the next; the greater the apparent protection when the anchor is dropped close

GREEK COASTER

in, the more imminent the danger when the wind is blowing a sudden gale right on the rocks. A southerly wind and fine weather may suddenly shift

to due north with a heavy squall and confused sea, while six miles to the eastward a distant sail is seen with a fresh easterly wind.[1] Such incidents, frequent as they are in an archipelago of deep soundings and few real harbours where ground-tackle is of service, have had the effect of almost driving the not too daring Greek of the mainland off the sea.

A large part of the trade and fishing of the Aegean

TURKISH COASTER

and Levant is carried on by Turks, who, although not perhaps such skilled sailors as the Arabs and the Moors have been, have yet all the courage and pertinacity of their co-religionists at sea.

A favourite rig, to be seen alike among the islands of the Archipelago and in the Dardanelles, is the single-masted spritsail vessel carrying a square topsail, fore staysail, and one or more jibs. The mainsail is hauled

[1] Admiral W. Smyth's *Mediterranean.*

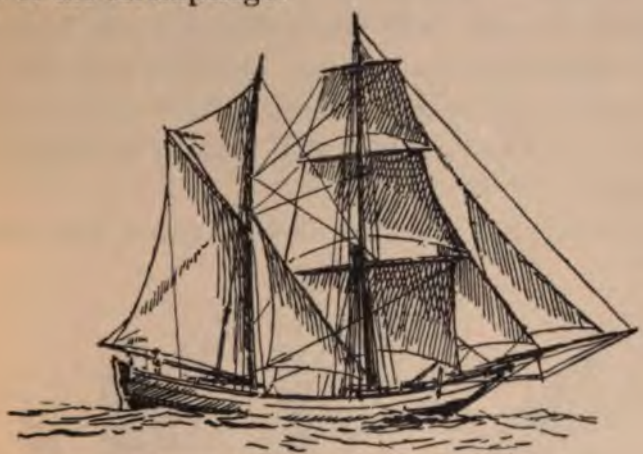
out along an almost horizontal line to the spreet end. There is no boom, and the spreet is controlled by vangs. The sail can be hauled into the mast with great rapidity and ease, and it is a quick and simple method of brailing and reefing which commends itself to the cautious Eastern sailor. As a rule it is badly set, being cut to bag in a manner less artistic than serviceable, this

SMYRNA COASTER

mode of cut, dear to the Eastern heart, being more conducive to speed when handled by those who understand it than we generally imagine, especially in heavy-laden craft.

The Turkish boat is built long of bow, low in waist, round of bilge, and high of stern. The latter is rounded and generally has the rudder slung outside on the curved stern-post. The low waist is often protected by a duck or canvas strake, which is easily removed in

ght weather for pulling, as in many of the Greek oats of the Archipelago.



LEVANTINE BRIGANTINE—POLACRE RIGGED

Simple sprit or low-yarded lateen boats are used or fishing and cargo-carrying in the Bosphorus. They

IN THE BOSPHORUS

have the same general features of build, and a fore staysail or jib, and are known as *mahona*.

But the most typical craft of Turkish waters, next

to the *càique*, the long-bowed, wide-sterned rowing-boat of the Bosphorus, is the polacre-rigged trader. This class of vessel was very common at the beginning of the nineteenth century, and although still met with on other coasts, as in the Tuscan *bombarda*, not quite extinct, it is most popular with Eastern Mediterranean seamen.

As a rule it is what we should term a pole-masted

FISHING AND CARGO BOATS

brigantine, but the name can, and used to, be applied to any square-rigged vessel having pole-masts.

As is implied by this description, the yards are lowered right down to just above the foreyard for furling; there are no foot-ropes, the crew standing on the yard below from which they can just reach to furl each sail above. There are no tops, and the mast has a peculiar tapering appearance not unpleasing to the eye.

The mainsail is either a balance-lug or of the fore-and-aft pattern, with very long boom, and the main-mast, in the latter case, is often in two parts, and is

fitted with main and main-topmast staysail and jib-headed gaff topsail. It often acquires a tipsy-looking rake forward, while the foremast adopts a somewhat similar drunken rake aft.

The crews are inclined to bestow more pains upon the cleanliness of the sails and gear aloft than upon that of their own persons or of their cabins. Yet some

IN ALEXANDRIA HARBOUR

of these little brigantines are perfect pictures, and are greatly cared for by their owners.

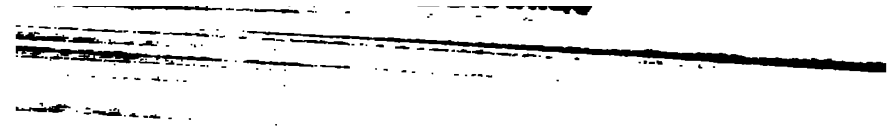
I shall always remember the little vessel which we saw one night as we steamed eastward in a big mail boat, a few hours before entering the Canal. The sun was low astern of us, when, crossing our bow close-hauled to a brisk westerly breeze, a white-sailed polacre brigantine of not more than 150 tons passed us. She was deep-laden, and her long bow had the look of

a dolphin as she rose through the swell. She w
sailing very fast, with every sail drawing full a
bathed in the sun's rays, and she threw the spray off
windward in showers into the deep blue of the sea. Th
whole ship's company watched her in admiration unt
she was far away on our quarter—a beautiful visio
come and gone of the lands and seas we were leavin
behind us, some of us, alas! for ever.

BEANPOD (TAGUS, 1861)

DHOW BEATING OFF RAS ALARGAH

To face p. 286.



CHAPTER IX

THE INDIAN OCEAN

THE Indian Ocean, that sea of bright colouring, the home of the wide-sweeping monsoons, brings us to many old craft relics of the early days of man's seafaring.

Mostly fair-wind sailers, there are few vessels in this portion of the East of a sea-going character, as we understand the term, capable of keeping the sea or working off a lee-shore. Trained to the long use of favourable monsoon winds which are experienced in certain directions for considerable periods of the year, which come and blow and go again with unfailing regularity, the Eastern sailor with characteristic philosophy has as a rule resigned himself to the inevitable, unwilling to attempt to do otherwise than bow to the evident decrees of Fate, and take a fair wind when it is provided for him by a kindly Nature.

His ship is thus, as a rule, high-sterned to prevent pooping; she is fitted with sails of light calico material, and by way of rigging a quantity of ungainly cordage in various stages of decay.

Careful corking and water-tight decks are alike generally unknown. Labour-saving appliances such as windlasses and blocks are rarely employed and imperfectly understood. In short, for the most part, the boat-builder of the Indian Ocean is content with a fabric that

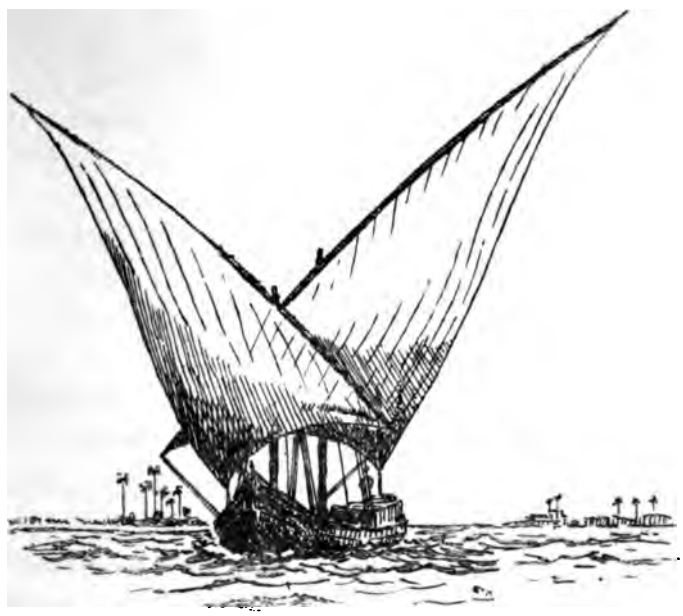
will float on water and protect him from the sun, and carry his whole family with him on nearly all occasions. Of the warm rain or breaking seas he does not mind

THE GAIASSA IN WAR (FROM A SKETCH BY MAJOR N. M. SMYTH)

reck; they refresh his body, wash out his clothes, and cool his vessel, and he has no great quarrel with the Hence they generally find access to all parts of ship when in strenuous mood; but, as usual, there are exceptions.

The Gaiassa of Egypt

Of Arab build and rig, and therefore really of Asiatic origin, the Nile *gaiassa* is now a fairly historic craft. Not only has it given birth to its glorified and fashionable offspring the *dahabia*, the luxurious home of the pleasure-seeking American or Briton, but it has proved



NILE GAIASSA

its utility as an engine of the British Empire. It has taken a brave and arduous part in three campaigns, and shares with the mule, the elephant, and the camel, the distinction of having ministered to the wants of the British soldier on the march.

Yet the gaiassa is in reality only a wall-sided canal barge in build, with a lofty and pretentious-looking

stem,[1] and a disproportionately vast rudder. Her sole claim to our admiration lies in her splendid lateen sails. These wings still bear the Arab name 'Kala trinkeit.'[2]

The mizen is probably a comparatively late addition to the rig used in the larger boats as in the sea-going coasters of the Red Sea, for sailing on a wind or for setting goose-winged going free. This mizen has of late years very much increased in area, especially since the development in size of the boats themselves, until now a large proportion of the Nile craft leaving

ANCIENT STEM, FROM A MODEL IN THE GIZEH MUSEUM

Cairo with a fresh wind will be seen to carry what amount to main and foresails.

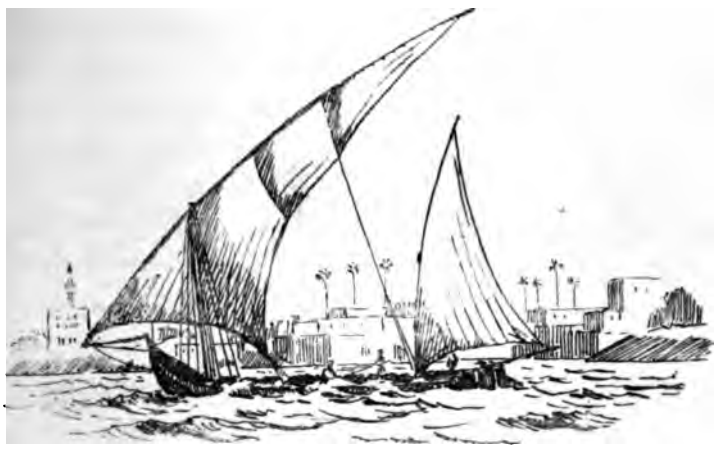
No one who has seen the gaiassa under way can fail to be impressed by the length and power of its great lateen sails, and no picture of Egypt is perfect without that tall pyramid-point of white canvas gliding along the sky-line.

As is so often the case among a boating population,

[1] This peculiar bow may be derived from a high stem which was in vogue in certain Egyptian boats which had a similarly exaggerated rise, as shown in certain old models in the Gizeh Museum.

[2] Kala—sail; trinkeit—trinchetto: the foresail of the old Mediterranean lateen-rigged craft, which, as already indicated, came from the Arabs originally. The French *arbre de trinquet*.

the fishermen and the gaiassa crews are a people apart. They have their own thoughts, their own ways, their own life, unaffected to a large extent by the life over the banks above them. To a European seaman's eyes their ways are peculiar and perverse; nothing can be more astounding than to carry your main-yard over your masthead, and even when close-hauled to carry your sail set well to windward of the weather rigging.



GAIASSA, CLOSE-HAULED

Yet the gaiassa captain does this and much more, and he arrives just the same at his destination.

One had been led to suppose that the gaiassa skipper never attempted to beat to windward, that he and his ship were only good for fair-winds, and that when in any difficulty he could only appeal to Allah, and tear his beard.

Yet my friend Hassan Mahomet in an eighty-foot gaiassa rather enjoyed a head-wind provided it was at high-water season and he could get the wind 'true' over the banks, and he was well laden. For he said it tested

his rigging and showed that his gaiassa was better than any of the white-painted dahabias which can only row against wind, and for which he expressed the greatest contempt. And he was accustomed to warp out of the locks at the Barrage against a strong current, without so much as a curse or a prayer, by the hands of himself and his two sons, and the help of God. He knew how the upper air was blowing, and by bracing in his tack-

ABREAST CAIRO

rope he had a fair wind in the upper thirty feet of sail although all was calm below that level.

His main-yard was 84 feet long,[1] and his mizen 50 feet. One was at first inclined to shudder at the length of spar, but one soon found that with the very short foot to the sail and the angle which the whole can be given by slacking up the tack-rope, there is even on a wind very little leverage likely to cause a capsize. Moreover, owing to the give in the long-yard, the upper portion of the sail does not hold the wind when close-hauled, and on this point of sailing is generally flapping for a long distance down the leach.

If small craft are capsized more frequently, it is be-

[1] The writer has measured a main-yard on a dahabia 134 feet long, and another 114 feet.

cause there is much less play aloft. Their yard is stiffer, and the tack tackle is often tauter in and irretrievably belayed. If under such circumstances the sheet is also belayed out of reach, a capsize is a manœuvre of no real difficulty in a fresh breeze coming tricky off the land.

The sail is generally set on the starboard side of the mast, although the yard can be shifted over the rope padding on the masthead if necessary. In going to

GAIASSA—WIND COMING FREE AFTER A BEAT

windward even on the starboard tack, the heel of the yard goes far out to windward and ahead, and the sheet is hauled down taut. The tack tackle is slacked up and then adjusted to give the required tautness to the leach and foot, and thus ensuring a true lead for the sheet of the sail.

There is a vang about a third of the distance in from the peak of the yard, and strong tack tackle goes from the heel to the high stem. There is a brail-rope from the sheet earing to the masthead, and when taking in sail this is hauled up and the wind spilled; the sail can

then be furled by one or more men going on the yard as may be required by the size of sail and strength of wind. A long line is generally used for tyer, with a number of running hitches, which with a series of pulls from the deck can be shaken free one after the other when setting sail.

The mizen is generally a beautifully cut and shaped sail, and stands far better than the mainsail on a wind.

GAIASSA RUNNING

The Arab sets it at all manner of queer angles when off the wind, and its lateen shape lends itself to being handled in a variety of ways.

The boats are quite flat-bottomed, and about five or six beams to length. The high bows which are so peculiar are decked at a steep angle right up to the stem-head. The bottom is protected by a certain amount of keel-piece forward as well as aft, but this gradually runs into the hull amidships. The reason of this keel appears to be as much for protection in

grounding, which is necessarily of frequent occurrence among the ever-shifting channels, as for the purpose of giving grip in the water.

The high bow and mean stern are a peculiarity of many Levantine small boats, but are nowhere more accentuated than in the gaiassa. The top-strake is very often built up with planks set in dried mud, and partakes more of the coffer-dam than of naval architec-

FLOOD-TIME

ture. It is generally inside the gunwale, thus leaving a track outside for the men when quanting. Owing to this coffer-dam construction being used also to end off the clumsy transom-stern, the rudder of a fully laden gaiassa often appears to be detached from the stern, and by some strange device to be towing at some distance behind the boat.

But with her strange combination of clumsiness, of serviceableness, and of beauty, the gaiassa is undoubtedly not the least remarkable of the wonders of Egypt.

The other Nile boat known well to British and Egyptian soldiers is the less picturesque but not less useful *naggar*, which has its home upon the waters from the third cataract southward.

The naggar is not an aristocrat, and has no notions about personal appearance. One who knows her well declares she never paints. However that may be, she

NAGGAR

is of the roughest in material and appearance. She is constructed of stout baulks of 'saut,' or heavy *acacia pilotica*, pinned together by long iron nails clinched on the outsides.

The rig is a single balance-lug with a boom along the foot, which is so set as to top the leach of the sail up in the air like that of some of the Pacific Islands canoes. The lateen is rarely used as yet, although coming into favour. Imported spars are

much in vogue, but in default the masts, yards, and booms are generally of Kakamut wood from the upper Nile. These boats are all sizes—from thirty feet upwards—and have the heavy gaiassa form of rudder. In coming northward down river, and against the prevailing wind, they are fitted with outriggers and long sweeps, and rowed double-banked. As in many parts of the Far East, the men stand to their work facing forward, and take two or three steps at each stroke.

In descending a cataract or rapid the Nile boatman profits by the up-stream wind to head his ship up-river, and sets sufficient sail to keep way against the current. Thus while the vessel keeps steerage-way and is well under command, he steers her slowly stern first down the rapid. If the wind lightens, or the stream gets stronger or more rocky, he makes sail; and when the boat reaches slacker water, sail has to be proportionately reduced. The enormous rudder of both gaiassa and naggar is thus explained, it being used with great effect, as in other fresh-water craft which navigate in strong currents, to swing the boat athwart the current, or swing her head up to it when rocks are threatening. The Thames bargeman knows something of the same art in going through bridges on a strong tide; but the latter is admittedly tame in comparison with taking a Nile rapid stern first.

The ancient Egyptians were adepts at Nile drifting, and Herodotus gives an account of what is, I think, the earliest form of 'drogue' which is known, made of wooden frame and matting, by which the boats' heads were kept down-stream and travelling with the

current, while a stone sinker was used towing deep at the after-end to 'keep the course straight.'

The lower waters of the delta of the Nile and the Suez Canal and its salt-water lakes make a large navigable district for shallow big-sailed boats, mostly of the gaiassa style. The lofty and very narrow form of sail shows that they are accustomed to inland waters, in striking contrast to the lateen of the Western

THREE-MAST GAIASSA, NILE DELTA

Mediterranean, or even of the sea-going dhow of the East. Great as is the interest of the upper Nile, this land of the lower delta is even more full of picturesque and peaceful Eastern life. It is the home of a simple and hospitable folk, who live by and upon the wind-swept waters of Lake Manzala and the big winding waterways leading to such places as Damietta, Ismailia, Alexandria, and Port Said, where much boating activity of interest prevails. The pelican and the king-

fisher and countless duck add interest to every day's sail; and although the villages are more squalid generally than those of Upper Egypt, they are not lacking in beauty and quaintness and in the charm which the wide horizon of a fen-like country always has to offer.

At Suez a seaworthy type of lateen boat is used much more of the strictly Arab build. There is a long, sharp-pointed, overhanging bow with sharp sections,

SUEZ SHORE-BOAT

great beam amidships where the mast is stepped, and a raking transom-stern. They have the horizontal painted lines and the white bottom so frequently seen in Arab sea-going vessels. The sail is of the Arab cut, with several feet of luff below the heel of the yard. It is invariably set on the starboard side, and the tack, as in the Adriatic lugsail, is carried well off towards the gunwale in order to keep the sail off the mast and prevent a back-sail when on the starboard tack,

and especially when close-hauled. In fact, in boats it is brought right to the gunwale on the board bow. The yard is generally kept standing, the sail hauled out along it by an outhaul when set, as in many small Mediterranean lateens, and in the Cambodian lugsail boats of the Great Lake. When furled it is bunched in at the mast, but the fore triangle of course remains. It does not, however, hold much wind. A small fore staysail is used in the

SUEZ SHORE-BOAT

larger boats, and is a great assistance both to speed and staying power. These boats in a strong wind are very well handled by their swarthy crews notwithstanding the long white robes, which, when wet and wind-blown, form no small handicap to agility.

The Dhow

No craft has played a greater part in the world's history than the *dhow*. The lateen yard is as much the emblem of the Faith as is the crescent. Wherever the great Mohammedan creed has been preached,

wherever the sword of the Faithful has carved its glory path, there the lateen-sail has heeled to the wind and the long grab-bow has cut its way. Thus the lateen is the rig to this day of all the Mohammedan, and not a few Christian, sea-coast people from Malabar to Gibraltar.

The true *baggara*, *bagala*,[1] or Arab dhow,[2] the probable parent of all the lateen-rigged offspring, is now

IN ADEN HARBOUR

mostly to be met with in the Red Sea and eastward to the Persian Gulf, Karachi, Bombay, along the Malabar coast, and down the coast of Africa as far as Zanzibar, making its voyages with the fair wind of the favourable monsoon, and quite capable of holding its own in the hard weather often to be met with in the Indian Ocean. Next to the Chinese the Arabs

[1] = 'mule,' and therefore a cargo-carrier.

[2] A small class is known in the Red Sea as *sambuk*.

have been the most skilful and daring seamen of the ancient East, and in the dhow they have devised a fast, able, sea-going type of ship, not a whit less remarkable than the junk.

Notwithstanding local differences of detail, these vessels vary very little as a class. They are generally grab-built, having a long overhang forward. There is great beam and rise of floor, and a very raking transom-stern. The shell planking secured to the

ADEN OPEN BOAT

wooden frames is generally worked in two thicknesses, with a layer of composite between, thus making the craft very dry and giving great durability. In fact, many of the dhows still to be met with are much older than their owners, and have been sailed by three generations of skipper—grandfather, father, and son. There is generally a high poop and fo'c'stle deck, the rest of the vessel being practically open. Dunnage or cargo-battens are nailed to the inside of the frames to keep cargo off the bottom, and rough planks laid loose over cross-beams provide a fore-and-aft gangway.

The *pattamar* used for the Bombay coasting trade has generally regular bulkheads dividing the poop and fo'c'stle from the hold.

The rig consists generally of main and mizen lateens. The mainmast is a big spar stepped amidships, with a great rake forward, to enable it to carry the great weight of the long lateen yard in the right place. This yard is generally about the over-all length of the boat, and in the larger baggara it often consists

BATELO

of three or even more pieces spliced together. It is hoisted by a stout halyard, often in two parts, passing from the fore side through a sheave at the masthead, with an enormous three-sheave wooden block stropped to the end. The purchase leads to a four-sheave block placed just in front of the poop.[1] There is very little rigging, usually a forestay and a couple of runners on each side. The sails are seldom reefed, but two or

[1] This appears to have been the usual lead for the main halyard in the ancient Egyptian ships used in the Red Sea in the Punt Expedition about 1600 B.C. (*v.* Holmes's *Ancient and Modern Ships*, and Torr's *Ancient Ships*). It is similar to that of the Nordland jaegt of Norway (*v.* chap. iii.).

three sails of different sizes are carried, to be bent according to the weather.

The mizen-mast is a much smaller spar, stepped well inboard a few feet from the fore end of the poop, with a smaller rake, however, than the foremast. This sail is seldom set when off the wind, but is used in beating to windward, a point of sailing in which, like most Eastern sailors to whom time is no object, the Arabs but seldom indulge. None but a fool, or

GYBING TO CHANGE TACK, ZANZIBAR

the impatient Western, will beat against a head-wind if there is an anchorage within reach.

In changing tacks the Arab puts his helm hard up, and wears round, letting the sail fly out forward, and the yard come round over the masthead; the sheet is then caught and hauled aft on the new tack, for which, of course, the ship must be luffed to the wind in order to spill the sail in the absence of any proper tackle on the sheet. In the Mediterranean the lateen is allowed to stand against the mast; but, though the heel of the yard may stand some way out

to windward, a certain portion of the sail is liable to be 'aback' against the mast and form a 'back sail.'

The Arab sailor has his own ideas of painting his ship,—a light-coloured bottom, black topsides with two white lines, the lower one of considerable breadth, are the rule. The poop is generally considerably ornamented, its windows or ports, of which there are often a number, being picked out much in the style of the old wooden sailing-ship of a century ago.

There is, it must be confessed, a good deal of that happy-go-lucky, loose-rope-end style about the seamanship of the modern Arab sailor, which for some reason or other seems well-nigh inseparable from the East. The old-time sea-song has not gone out of fashion in the dhow any more than in the junk, and there is the same inability to keep quiet and execute orders in an emergency.

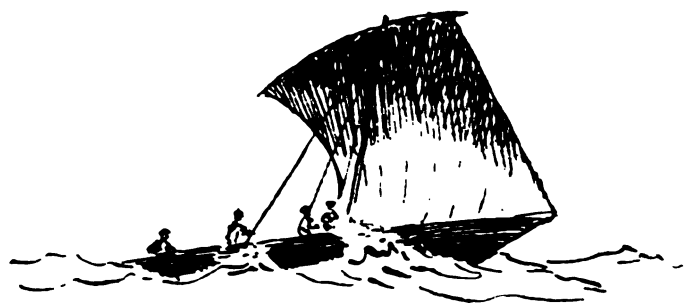
Getting up sail is a very lengthy, not to say noisy, operation. The yard and sail are very heavy, and take the whole force of the seventeen men or so who form the crew to hoist. When all is ready an old man begins a chant in a high-pitched falsetto shriek; the hands yell 'Ho!' and pull more or less together. They then keep time by calling out the name of Mahomet, or some sheikh or place, the name being always started by one man and taken up by the rest as loud as lungs permit, very much after the style of the old sea chantie of the square-rigged ship. It makes, however, little difference to the Arab what is called out, so long as plenty of noise is made.

It takes half an hour to get up sail in ordinary weather, and more if there is any wind, while shorten-

ing sail is an equally lengthy process, and in squally weather becomes really dangerous, as no attempt is usually made to begin operations until the force of the wind is becoming heavy.

The sail is often furled on the yard standing, one man going aloft and starting at the outer end, and in light winds he goes on furling and tying up the bunt steadily all the way down until the whole sail is furled.

The usual occupations of a crew include laying



FISHING CANOE, OFF RAS IMRAN

up rope from small pieces of rough bass, of which an unlimited supply is generally carried. They also occasionally wash their solitary garment, made of blue or white cotton after the fashion of a nightgown, this being preceded as a rule by a careful examination of all the folds for lice, with which too often the older craft are infested.

The crews are very easily alarmed, and lose their heads in an emergency in a manner which would do credit to a Russian battleship. They mistake lighthouses for ships, and tide-ripples for sandbanks, and every discovery of the sort is followed by a wild

scene of excitement and confusion, accompanied by screaming and shouting from every man on board.

Three kinds of dhow[1] used to be generally recognised on the African coast: the *bugala*, or *bagala*, the genuine dhow (which is the most numerous), the *bateele*, or *batelo*, and the *badane* of Persia and Arabia. The *matapa*, a light open boat, which was used a great deal in the slave-trade on the rivers and estuaries, is the only type of boat which is not of dhow origin. It has a square sail, and is really of the more primitive canoe type. They yet have a deepish forefoot, and set the tack of their peculiar-looking sails very far forward in a manner which bespeaks Arab influence. This type of boat one has seen in a heavy onshore sea off Ras Imran, making wonderful weather of it to windward. They appear now to be used chiefly for fishing purposes by the Somalis, but are not often met with.

The *Gehazi*, which is the local name of the Arab dhow south as far as Zanzibar and Dar-es-Salaam, is of the same build practically as the Red Sea *sambuk*. Some of these boats are of first-class size, and are in fact true *baggara*, with high poops, mizenmast, and all complete. Others omit these two features, but retain the others generally characteristic of the smaller Arabic seafaring vessel known as *batelo*.

Much interest inevitably attaches to these vessels,

[1] The usual dimensions of the larger *baggara* are: Length, 85 feet; beam, 21 feet; depth, 12 feet; tonnage, 200.

The *pattamar* varies from 60 to 200 tons; the dimensions for the larger class being: Length, 76 feet; beam, 22 feet; depth, 12 feet.

The *batelo* is only about 30 tons; length, 51 feet; beam, 10 feet; depth, 4½ feet; and the Red Sea *sambuk* is generally from 18 to 20 tons only.

for they are the same to-day as they were in the early part of the last century, when the British Navy carried on against them upon the coasts of Africa, and especially upon the east coast, what was practically a long-continued, difficult, and dangerous war. Before the construction of the Suez Canal, communication

ZANZIBAR GEHAZI

with the whole of this coast was slow and uncertain, and the British public never fully realised the arduous character of this service, or the remarkable success achieved by the patience and perseverance of the officers and men of the Royal Navy in the face of the greatest difficulties and dangers.

A few records of the service remain which will repay study, if only to show what could be done in

navigating open boats by men who knew true discipline and had no souls for notoriety.

But more than this: it is to these old *gehazis* and their forerunners that we owe the only civilisation which has ever reached and touched the life of the East African native.

The old builders of the Great Zimbabwe, Semitic or otherwise, came by sea. They disappeared, and practically left nothing of influence behind them.

GEHAZI, CLOSE-HAULED

The Arab came in later times, and if he brought a curse to many in the slave-trade, he yet converted a third of Africa to the faith of Islam, and he introduced hundreds of thousands of negroes to some form of Eastern civilisation which they would never have known and still less risen to but for him. The Zanzibar of to-day is no African kraal; it is an Asiatic town set in Africa.

A considerable dhow trade still takes place with the favourable monsoons between Zanzibar, the emporium

of East Africa, and Muscat and other ports of Arabia; but even in the north-east season one may meet a baggara heading northward within three hundred miles of Cape Guardafui.

A smaller class of Zanzibar vessel is the *mashuwa*, or open fishing-boat worked by the Arab of the neighbourhood. They are generally dilapidated little

SMALL ARAB 'MASHUWA,' ZANZIBAR
(FROM A SKETCH BY MAJOR N. W. SMYTH)

crafts with the usual long bow and transom-stern, and are painted once in a lifetime with the usual black and white. The black turns gradually greyer, and the bolts rustier, and the water leaks in more freely, until the little vessel is almost falling to pieces, ere her owner thinks of giving her another coat of paint.

They all follow the same weird method of changing tack already referred to, by wearing round and allowing

the sail to fly out round the yard. As the vessel comes round to the wind, the sheet, which is spliced into the clew of the sail to prevent its getting adrift as it whips to and fro, is hauled in by the crew. Nothing more cumbrous can be imagined, but the long grab bow spins round in a less turning circle than would be taken by longer-keeled craft, and the stern has an appearance of flying round, and once the wind takes the other quarter she is in the wind's eye again in no time.

'MASHUWA'

The Bombay boats carry this turning power to a fine art, and there is a story of an old English sailor who, when he put the helm up, got so giddy at the speed with which his strange prize flew round that he forgot to check the helm, and the boat went on turning circles, to the wonder of the onlookers, until at last he got over his surprise and steadied her on her proper course.

As regards speed, there is no doubt that the Arab build is unsurpassed in a fresh wind. If the Arab seamen of to-day could or would set their sails as

the Italian lateeners do, they would have not only one of the fastest but also one of the most weatherly of seagoing vessels. Occasionally one has seen a piece of sailing from one of these vessels which was of the highest order. I especially remember one carrying on and beating off the lee-shore off Ras Alagah in a strong onshore wind, which gave one an idea of

PATTAMAR

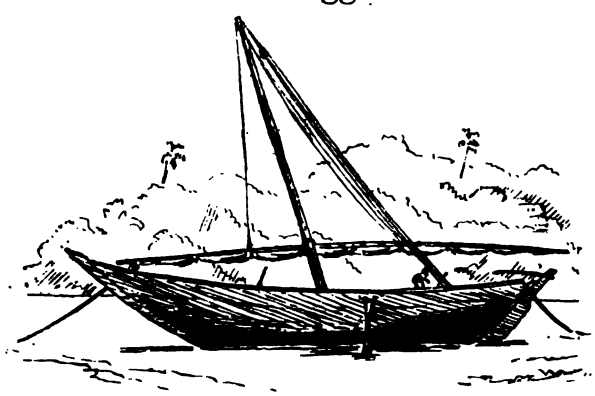
what the dhow can do in capable hands such as she must have had on board on that occasion.

But as a rule the sail, being made for fair winds, is of too light material to stand on a wind, notwithstanding the peculiar make of the sail, which, besides being heavily roped all round, has a rope border sewn into each cloth which runs from the head-rope to the foot. This is one of the causes of the very hollow foot in all the Arab sails, but at least there is no large belly in a sail thus made. On the other hand, the sail does not

present a smooth surface to the wind, there being ridge after ridge of tautened rope running at right angles to the direction of the wind off the sail, and this is especially bad after rain. It tends seriously to prevent the sail being a good one to windward.

India

The *pattamar*, the favourite type of trading dhow on the Bombay and Malabar coasts, has much in common with the Red Sea *baggara*. These boats may



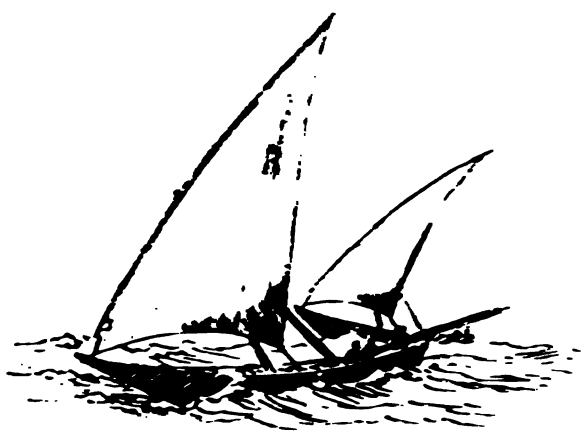
BOMBAY BOAT

be seen reclining at all angles on the sands at low water along these shores, moored with vast bass warps, their long yards on deck, and their remarkable snub-nose bowsprits sticking into the air. They carry a small jib forward, and the mizen is more often bent than with their Red Sea sisters. They are often of better construction, and, as already remarked, have distinct end compartments. Their ability to stand rough weather is undoubted. *Baggalo* is the name often used for these boats on the Indian coast.

At Karachi modifications of the dhow type are to be seen; the triangular lateen sail and the sharp stern

are used, and some very light, elegant, fine-weather craft are turned out.

The Bombay fishing-boat, being a half-sister of the *pattamar* and daughter of the dhow, needs mention as a very successful example of Mohammedan influence in things nautical. The newcomer off that beautiful harbour is astonished at the speed and weatherliness these boats display, even in the heavy onshore sea which comes with the monsoon.

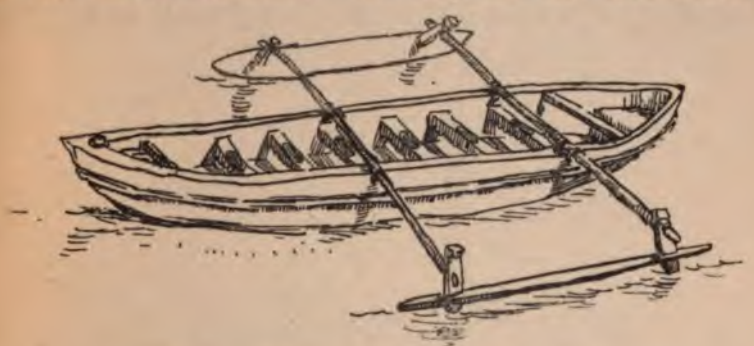


BOMBAY BOATS—S.W. MONSOON

They have the very sharp bow with hollow lines familiar in the dhow; the stern, which is greatly raked, is not nearly so striking to the eye, but is full and round. The keel is often arched, which gives a most peculiar appearance to the boat when out of water. The sharp, deep forefoot takes the place of the modern dagger or fin keel, now so common in our small-raters in home waters, and adds enormously to the weatherly and turning powers of the boat. The whole sail area is placed very far forward over this portion of the boat as in the dhow, the centre of effort and centre of lateral

resistance being thus given almost the same relative positions as the designer of a Clyde or Solent rater would choose. Yet to look at the Bombay boat or at the dhow for the first time, one would think that they must infringe every principle known to Western boat-builders. In reality they arrive at an identical result, albeit by a method most peculiarly their own.

The lateen reaches as far south as Ceylon, where it is seen in combination with staysails and fore-and-aft



ARAB DUG-OUT 'GHARAWA'—17 FT. BY 2 FT. 6 IN.
(Upper strake pegged on; gaily painted to attract market-women.)

mizens, not infrequently with the outrigger, which is such a striking feature of the Cingalee boat-building.

The outrigger appears to be scarcely a true Asiatic method of construction, and has probably come up to Ceylon and Zanzibar from the south and east. It is the first effort of the savage to afford stability to his dug-out.

The dug-out form of construction is the simplest and most effective for navigation in protected waters, and in capable hands. In well-timbered countries, such as Burma and Siam, long craft of 100 feet by 8 or 10 feet beam are often made in this manner, and are

[illegible] when necessary by the addition of [illegible] at the side. But the fault of the dug-out is always [illegible] beam, and therefore of stability.

The poor fisherman with his humbler boat, who needs to carry fish, or nets, or rice, soon feels the want of stability in his boat.

On the Me Kaung, the great river of Indo-China, the Laos fastens on bundles of bamboo along the gunwales of their dug-outs, many of them going 60 feet in length, by this means not only giving such stability to

[illegible] as to render a capsize even in the most violent squalls well-nigh impossible, but also rendering them unsinkable by reason of the air compartments afforded by nature in the bamboo.

The form of outrigger, or side air-chamber, would probably prove very efficacious at sea, but it has the disadvantage of greatly retarding speed.

The sea-going native craft has therefore more generally adopted the better known form of outrigger float parallel to the keel of the boat at a distance of two or

three beams, by two or more transverse pieces, as in the *Gharawa* of Zanzibar.

These outriggers in no way retard speed, but, floating lightly on the surface, give great stability, and enable the smallest dug-out to carry a press of sail which renders them very speedy off the wind.

It is in the big rice-carrying boats of the rivers and canals of India that we find ourselves in the old world

BENGAL 'MALAR PANSHI'

of boat construction which has long disappeared from more Western lands.

The *pulwar* and *malar panshi* are both typical types of the old-fashioned boat architecture of Hindostan, the rig that of the simple squaresail, the hull either a long dug-out in general form reminiscent of the main outline of not a few ancient Egyptian boats, or built on a dug-out frame after the manner of many Indo-Chinese river boats. In every case there is the

high steering platform, and either the primitive form of fixed steering-oar turning upon its axis, and fixed to the hull, which is seen alike in the Lao river boats in Siam at the present day, and in the Egyptian vessel of the eighteenth dynasty, or the peculiar Indian balance

BOAT FROM THE TOMB OF MAHITI, PRINCE OF SIYUT

rudder in which a considerable portion of the area of the rudder is placed forward of its turning axis, which is essentially a development of the former by a mere increase in the size of the blade.

The *dinghy* of Calcutta is a striking old-world form,

NEAR BURDWAN

admirable in construction and design. Although not a true sailing-boat, it carries sometimes a low spritsail to assist its rowers in the strong tide of the Hugli. Its form is strangely like that of an ancient Egyptian boat in the Gizeh Museum from the tomb of Mahiti, Prince of Siyut.

The Maldives

Of true sea sailing-boats the Indian Ocean has but ew with any great peculiarity of mast and sail. The

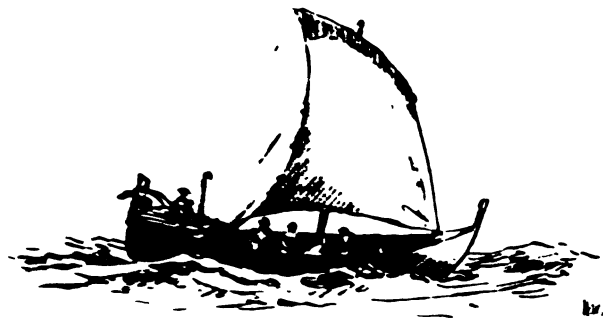
'PULWAR,' BENGAL

Maldive Islanders, formerly contented with the mere utrigged dug-out, have in the last half-century de- eloped some quite good boats of their own.

MALDIVES

With high stem and stern and peculiar short-yarded ugsail, the open boats remind one not a little of the Sondmöersk yawl of Norway, but with the true Oriental

love of a high seat for the steersman, the ἐδώλιον of Herodotus and Euripides, they have improved on the more Northern model to the extent of a flat platform



MALDIVES OPEN BOAT (FROM A MODEL)

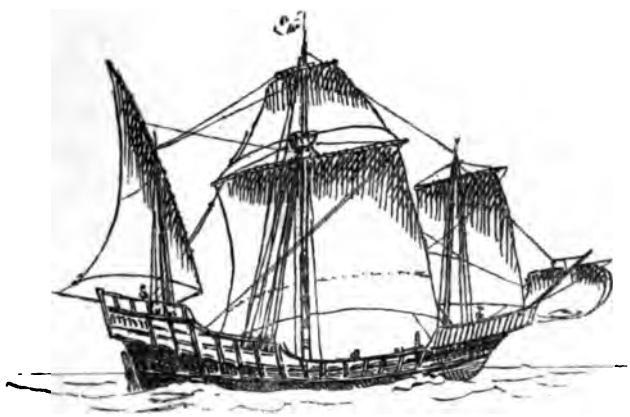
aft upon which the helmsman is accommodated. The hull is of a particularly wholesome and able type for an Oriental model, with clean lines and easy run.

MALDIVE TRADER

The larger class of boat is decked in with somewhat elaborate and comfortably arranged deck-houses, and

carries a small topsail in fine weather. The powerful grip of the forefoot, the only resemblance to the dhow-build which they present, enables the centre of effort of the sail area to be placed far forward. These boats have power and speed, and are a fine class of sea-boat.

The most remarkable vessel, however, is the larger Maldive trader, running to a hundred tons or more in size. She is fully decked, with considerable deck-houses and big overhanging forecastle, very like that



FIFTEENTH-CENTURY CARAVEL

of Columbus's ship the *Santa Maria*, and other vessels of the fifteenth century.[1]

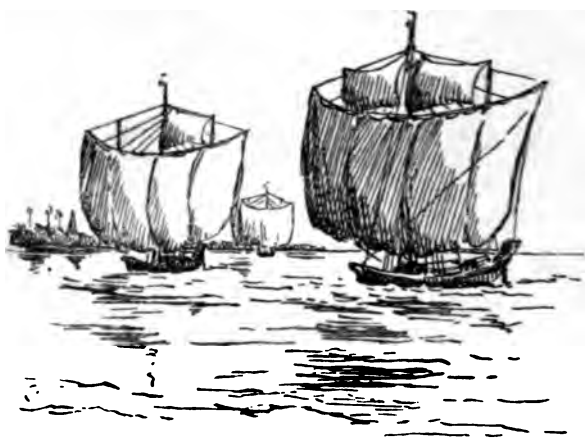
The rig, moreover, is the three-mast arrangement which was general in Europe about that time. A tall mainmast carries a big main squaresail set high up with topsail and occasional small topgallant sail. The mizen carries a fore-and-aft gaffsail, taking the place

[1] It is noticeable that in the main outline of hull, in the general disposition of the three masts, and in the simple squaresails, the caravel of this period had altered but little in general plan, although largely improved in detail of construction from the ships of Pliny's time, and even the single topsail appears to have been known as early as 50 A.D. See Torr's *Ancient Ships*, Holmes's *Ancient and Modern Ships*, etc. etc.

of the lateen mizen in the fifteenth-century ship. Forward is a raking foremast carrying a square foresail well out over the bows, in the same way as the ancients set their ἀρτέμων. One may meet these vessels occasionally as far north as the Hugli, and with fair monsoon they are rapid passage-makers, but beating to windward is not their forte.

Burma

Although only a fair-wind sailor, one of the most



UPWARD BOUND

remarkable craft to be met with is the Burma rice-boat, one of the biggest and smartest forms of river boat in the world, and very far ahead of the rough Bengal rice-carriers in every particular. Owing to the prevalence of the southerly sea breeze which blows upstream for many months after the end of the cool season, these boats are rigged only for running up against the stream. When going against the wind they punt or pull along with the current, and never beat to windward. The squaresail, or square-headed

lug, is the only sail practically known in Burma. And in these boats the mast is a triangle formed of two spars meeting at the apex in a manner already familiar to us in ancient Egyptian drawings of the third and fourth dynasties,[1] and still also used in the Red River of Indo-China. The yard is a standing spar supported by a network of halyards. The sail and its topsails are brailed up to the mast, and when set are hauled out along the yard from the deck. A crowd of these craft

IN A BURMA CREEK

running before the fresh south wind up the broad Irrawadi form a fine sight in their way.

The most beautiful work in these boats is about the stern and the steersman's seat, upon which the Burman loves to bestow his most elaborate and careful wood-carving. Here the classical scholar may recognise his old friend the ancient κυβερνήτης sitting in state raised aloft beneath his ἄφλαστον; and he may study almost the identical method in which Greek heroes and Roman merchantmen used to sling their

[1] *Vide* Holmes's *Ancient and Modern Ships*, etc.

oar-blade rudders on the quarter, following the Egyptian example, which takes one back to the very earliest days of man's boat-building.[1]

Some up-river forms of boats among the Burmans and Talaings are very pretty and elegant. The fiddle-head, 'clipper' or 'schooner' bow shape[2] is a great favourite, although, owing to the shallowness and rounded-up form of the ends of these canoe-built

UP-RIVER BOAT

craft, the lower edge of the stem is frequently carried right out of water.

Taking all in all, the Burmans, and other boating races on the Indian Ocean, are neither so competent

[1] The modern method of slinging the rudder upon the stern-post by pintle and gudgeon only dates in Europe from the beginning of the fourteenth century, the ancient πηδάλια or quarter steering-oars having been retained in all Western ships until then. This innovation was a most important advance in shipbuilding, making possible for the first time a large increase in tonnage. The Chinese adopted the stern-post as the place for the rudder probably at a much earlier date, but they have always placed it in a rudder-trunk, somewhat similar to the centre-board case, through which the deep rudder could be hoisted up by means of winches when entering shallow water.

[2] The first record we have, so far as I am aware, of this beautiful form of bow, is in the representation of a merchantship on the painted vase found at Vulci, in Etruria, now in the British Museum, of about 500 B.C., which shows a hull as beautiful in shape as it is seaworthy in design. — *Vide* Torr's *Ancient Ships*.

or so courageous in handling boats, nor so skilful in designing them, as are the races immediately to the

ON THE IRRAWADI

west and to the eastwards; and in a limited experience of river boating with Burmese, the writer was more often in actual peril from want of watermanship, in

OFF MERGUI—REEFED

strong currents or rough water, than ever was the case during several years' journeyings among Chinese and Siamese, often under most unfavourable conditions.

An extremely pretty type of small sailing-craft is that used in the Mergui Archipelago. It has often the distinctive form of bow and stern of the Burmese and Talaing boat people, but the general appearance and the rig are very Malay in character. A good many of the larger boats are built up, upon the lower dug-out bottom-piece, in wide strakes, and have pretty clipper stems and overhanging counters, and in the last decade

MERGUI HARBOUR

were extensively used in the pearl fishery which flourished among the islands after the discovery of the Pawe Bank early in the nineties. They form a very lively and characteristic feature of the beautiful little port of Mergui. At low water they may be seen lying in all positions upon the mud, or sailing with the sea-breeze up the customary tracks in the mud-banks to *terra firma*. At high water they come running in under mainsail, or may be seen beating out with

gunwales awash, throwing the water halfway up the foresail. The larger ones have a comfortable little house or shelter aft, just before where the steersman sits. The rest is decked, but as is usual with warm-water sailers, is not water-tight.

A smaller form is little more than a long dug-out canoe, looking like a snake upon the water, and is used by the fishermen of the islands. They carry the same

MERGUI PEARLER

peculiar square-headed lugsails, with the foremast right in the bows; and dodging about upon their fishing-grounds in a lop of a sea, half a hundred of these boats form a really beautiful picture, and a remarkable example of what small craft well handled can do. In case of bad weather all of these boats are of course obliged to cut and run for the lee side of the nearest island. They have too little body to claw off a lee shore in any weather; but with centre or lee-boards fitted to them, a little more ballast, and higher sides,

they might give a very good account of themselves, the hull being without dead wood of any kind, and formed with long clean curves.

The writer's experience of them, though limited to

ON THE FISHING-GROUND

a short cruise of five days' duration, was not dull, the squally time about the beginning of the rains not being ideal cruising weather. The crew were Burmans, not

FRESHENING UP

accustomed, as it turned out, to the boat, and ignorant of the fact that the lower strakes had all been opened out by the hot weather. In one of the terrific blows heralding the break of the monsoon, we drove up the Tenasserim estuary in a sinking condition, with the

mainsail jammed at the masthead, and the water pouring in solid, underneath the deck. We could only run; any attempt to bring her to would have capsized her at once, and handed us over to the crocodiles waiting along the mud-banks.

The mainmast was tough, and the available knives blunted by six weeks' jungle-marching. It was a question of moments, until the mainsail obligingly split up and blew away to leeward, thus enabling us to get in what remained. The Burman *sarang* declared between

RUNNING HOME

his tears that an angel had gone up the mast to clear the sail—an explanation which my Siamese and I were disposed readily to accept.

After getting the water under, we sailed her through the squalls of that windy night with more circumspection and tenderness than I think I have ever felt called upon to display upon any similar enterprise.

But with a well-caulked boat and ordinary weather, sailing among the forest-covered islands of this beautiful archipelago and exploring its wide jungle-lined

estuaries with the cheery-natured Burmese for your companions, is a perfect form of seafaring which can be strongly recommended to any traveller of grit.

There is plenty of big-game shooting inland towards the main range, and the flora and fauna present

ON THE MUD

a most interesting combination of the peculiarities of India and Malaya.

The Karrens of the hills are cheery and enthusiastic sportsmen, and if the sport often involves hardship and privation as well as danger, it is none the worse for that, and is never lacking in variety and incident.

THE BANKS OF THE HUGLI

CHAPTER X[1]

THE MALAY PENINSULA

HAVING regard to the wide reputation which the Malays have earned for themselves as a maritime people in Eastern seas, it is, at first sight, not a little remarkable that, so far as the Malay Peninsula is concerned, they have developed until lately no really able type of sea-going boat. European writers have credited the Malays with building boats, the lines of which are unsurpassed by European types; yet so far as the writer has been able to discover, no specimen answering to such a description is to be met with in the peninsula. The characteristics of build are small displacement, hollow lines, V-shaped sections and sharp floors, shallow draught, lack of beam, and a consequent want of stability and weatherliness. An inquiry into local conditions, however, explains much. Two main factors have been at work influencing the development of boats and tending to produce the results arrived at. In the first place the rivers, which almost invariably constitute the ports of the peninsula, are, with scarcely one exception, protected by very shallow bars of sand or mud, which make it impossible for a deep-bodied boat to obtain shelter within them. These bars are

[1] The greater part of this chapter is reprinted, by kind permission of the Society of Arts, from the *Journal* of the Society for May 1902.

caused by the vast quantities of detritus brought down by the rivers in flood-time, as a result of the very heavy tropical rainfall;[1] detrital fans of mud are deposited around their mouths, over which the mangroves steadily grope their way out to sea; the current keeps open a channel, which is of fair depth within but shallow and shifting upon the bar, varying often with the strength and direction of the wind prevailing outside. In many parts of the Peninsula the onshore

A KELANTAN TYPE OF SEA CANOE

monsoon causes wholesale alterations in the banks and channels of these bars, and leaves enormous deposits of sand in the river entrances, through which the fresh water has to cut a new channel to the sea nearly every season. Safely ensconced within these creeks, protected from observation by the mangroves and from pursuit by the shallow bars, the old Malay pirates scarcely sixty years ago used to watch the seaboard traffic of

[1] Upwards of one hundred and ten inches per annum in some inland districts.

the Straits and swarm out upon their chosen prey. When pursued by the boats of the Royal Navy, they would make good their escape by just bumping over a friendly bar where their pursuers could not follow them, and then turning aside up some of the innumerable creeks that intersect the mangrove swamps near the river mouths. Hence came the necessity for shallow draught and small tonnage.

A second factor, scarcely less potent, so far as the west coast of the Peninsula from Penang to Singapore

SINGORA FISHING CANOE

is concerned, has been the variable character of the light breezes prevailing in the Straits of Malacca. The monsoon currents of the neighbouring seas do not blow with any regularity or force owing to the protection afforded by the island of Sumatra on the south-west and the Peninsula on the east; and the usual light winds are varied only by occasional south-westerly squalls of great violence but short duration known as 'Sumatras.' A third factor was the strength of the tides, which, on the Selangor coastline, have a rise and fall of twenty feet or more. The lot of the sailing-vessel in this neighbourhood is thus precarious; racing

tides and baffling winds and calms make progress very slow. Hence mechanical propulsion by oars or paddles was the first necessity of the old-time Malay seaman in the Straits as with the early sailors of the Mediterranean; sails were merely an occasional convenience. The Malay soon found that a long light craft, having plenty of accommodation along its sides for paddlers, was by far the best adapted to the navigation of these waters and, moreover, had the sailing-vessel at its mercy nine times out of ten—a very pleasing feature in the eyes of the Malay at the time when the Straits of Malacca served as the high-road for all the sailing tonnage of the Eastern trade. Moreover, the lack of freeboard suitable for manual propulsion was not a serious danger in a locality where heavy weather is so little known. Hence it came about that the long 'canoe' form of craft established itself as the most suitable type, and that not only, as was natural, for the river navigation of the interior, but also for the estuaries and the more open waters of the Straits. Steam and the growth of the British power in the Straits have combined to make impossible the old buccaneering pursuits dear to the heart of the Malay sailor, and he is now constrained to ship as a fo'c's'le hand in Penang or Singapore steamers, or make sailing voyages up and down the coasts as a commonplace unromantic trader or peaceful fisherman, with few chances of plunder, and even less opportunity for using his kriss.

The foregoing remarks are not, however, entirely applicable to the east coast of the Peninsula, where during the prevalence of the north-east monsoon in

China Sea, strong gales with heavy sea and violent ... blow havoc upon the unprotected coastline. At ... sight, then, we might have expected to find some ...werful sea-keeping boats on this coast, but, in fact, ... find practically the same types as on the sheltered ...aters of the Malacca Straits. The explanation is ...sy. During the prevalence of the onshore monsoon, ...e bars at the entrance to the rivers, which form the ...nly ports, are a whirling mass of breaking seas, ...hrough which only during rare lulls in the weather

SINGAPORE SAMPAN

can any vessel pass with safety. To such an extent indeed is this the case, that the north-east monsoon is called by the Malays 'Musim Tutop Kuala,' or the 'shut-port (*i.e.* close) season.' From the shelving beaches thrown up by the monsoon it is, of course, impossible to launch a boat. Hence from October or November to February or later, according to the strength of the weather, the whole coast is shut up so far as local navigation is concerned. An occasional high-sided Chinese junk will now and then venture along the coast, but communication in most cases becomes easier across the Peninsula, and the men of

Patani and Singora find it simpler to cross overland to Kedah to reach the west coast than to attempt to get out across the dangerous bars and through the heavy sea raging on the eastern coast.

During the open season the weather is not unlike that in the Straits, bringing light sea and land breezes varied by occasional squalls. Then the Malay fishermen run their long canoes down the beach and put to sea again, and the traders creep out with new mat-sails to resume their coasting voyages.

WITH FAIR MONSOON, FROM A SKETCH IN THE GULF OF SIAM

Owing to lack of ports free from shallow bars large displacement is impossible, and for the fishermen light canoe-like craft are preferred, as they launch easily from the beach and can be paddled at high speeds to come up with fish. Hence deep-bodied boats are again generally absent on this coast, and as the centreboard and leeboard are not known the paddle retains its importance for working to windward. It must be added, however, that for some trades, involving long voyages and calls at deep-water ports, the advantages of big-bodied craft are fully recognised by the Peninsular Malays, and that between

Singapore and Siamese ports, for instance, fine vessels of two hundred tons, built on European lines, are frequently to be met with. They are rather nondescript craft, often with overhanging clipper-stems and a superabundance of deck-houses. The masts are generally very light and crooked-grown spars; the rigging and gear aloft make up in quantity what is

EAST COAST TRADER

lacking in quality. They are generally rigged with two nearly equal-sized masts and bowsprit on which from one to three jibs are set. The mainsail and foresail are either Chinese lugs or on the European fore-and-aft plan, the gaff being a standing spar controlled by vangs. The sail is set by hauling out along it and taken in by brails to the mast, and long topmasts with short double-spar crosstrees and jib-headed topsails are used. The sails are of light material when

they are not, as in the case of regular Chinese or Malay lugs, made of matting, and they seldom set very flat.

The true Malay sail, however, is nothing more than an adaptation of the original and primitive square-cut sail of the early navigators, and this sail is used still in the majority of the Malay fishing-craft and small traders, matting being the material preferred. It is used in its most typical form by the primitive Orang Laut on the west coast, north of latitude seven. These

ORANG LAUTBOAT, JUNKSEYLON

primitive folk have practically no homes but the *kadjang* coverings of their boats, which they moor in snug anchorages among the islands. The *penjajaps*, the traders of the more civilised Malays on the east coast, also use this sail. A boom along the foot is almost as necessary as a yard along the head. The Malays, by the simple expedient of tilting the sail forward so as to bring the tack right to the deck, have long converted this square-cut sail into what is practically a lugsail, the most powerful of lifting sails on a wind. The dipping lug is set taut along the luff by a spar bowline fitting in a cringle, the

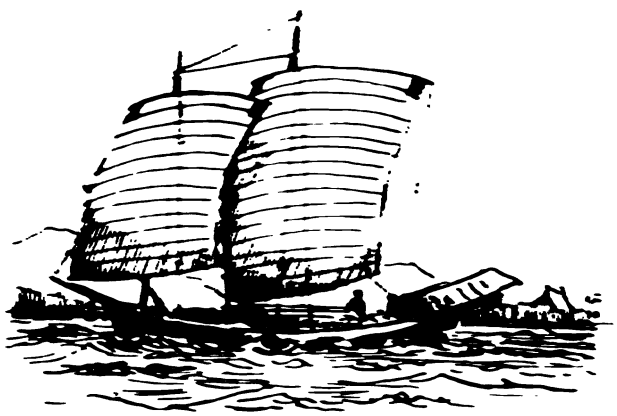
lower end of which comes to the deck abaft the mast, as was the custom in the old Scotch *skaffies*. The yard being too light to stand alone by the wind, is invariably controlled by a vang. The unhandiness of the dipping lug in tacking is felt to the full with this sail owing to the stiffness and weight given to it by the material of which it is made and the boom along the foot, and the operation of lowering and shifting sail is

AT ANCHOR, FROM A SKETCH OFF LAKAWN

such a long one that the anchor is often thrown over while the manœuvre is gone through with the two big sails of the *penjajap*.

The devotion of the Malays to top-hamper in the shape of raised deck-houses and outrigged superstructures over the bow and stern is shared with many other Eastern races, and is, no doubt, largely owing to the lack of body in their craft. In boats with sharp bottoms and fine lines the cargo, whether of fish or merchandise, has often to lie high, and consequently

all the accommodation for the crew is high up, a every foot of extra space which can be built on in t manner is so much added to their comfort and to co venience in working the vessel. The galleries ha out over the bows of the larger craft, both of Mala and Chinese, are used for working and storing th anchors, just as was the case in the vessels of th classical and mediæval seamen who used the fo galleries for the storage of their anchors: and in boa



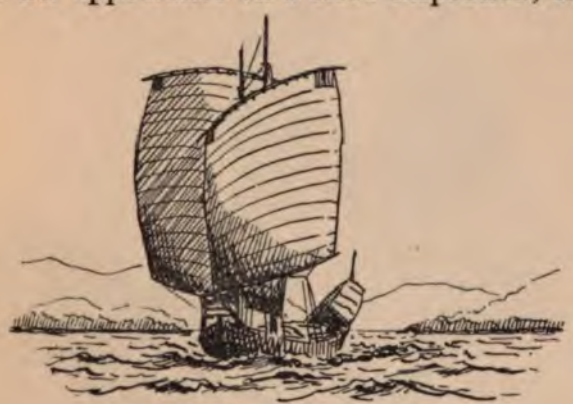
MALAY 'PENJALAP,' SINGORA HARBOUR

which are often so lean about the quarters, the little stern galleries and rails add greatly to the comfort and safety of the steersman and of men handling the mainsail.

Even in the smallest canoes, which most of us would think crank under any circumstances, there is generally in the East a grating (or lattice) forming a raised floor, within an inch or two of the top of the gunwale, upon which the crew is accommodated. It can certainly not be claimed that such an arrangement conduces to stability; yet such good watermen are

these warm-water sailors, and the Malays in particular, that even long coasting voyages are undertaken in such craft without any apparent anxiety as to the result.

The *penjajap* on the east coast is often a rather unsuccessful imitation of European build, with transom-stern half concealed by the overhanging stern galleries. There is generally plenty of show; but the boat is very wall-sided, with insufficient beam, which facts combine to spoil her appearance on a close inspection, although



MALAY 'PENJAJAP' GOOSEWINGED

she looks smart enough a little distance off. The writer has seen these boats nearly on their beams' ends when caught by a heavy squall at anchor, though with nothing but their slender masts aloft, a fact largely caused by the want of under-water body in the hull, and the amount of top-hamper by way of accommodation on deck. A bundle of bamboos along under each gunwale frequently adds some much-needed stability of the kind supplied by the outrigger, and provides a store from which to renew broken spars. Yet crank as these craft seem, the Malays manage to make their way for long distances in them with very few accidents.

No fact could form more conclusive evidence of their pluck and skill.

The Malay, like a true seaman, takes a great pride in his vessel, and if his ideas of ornamental decoration do not always accord with those of the West, he has, at all events, never been guilty of producing such scarecrows of the seas as many of the tramp steamers at this moment lying in the port of London. In

RUNNING INTO SINGORA—TRANSOM-STERNED PENJAJAP

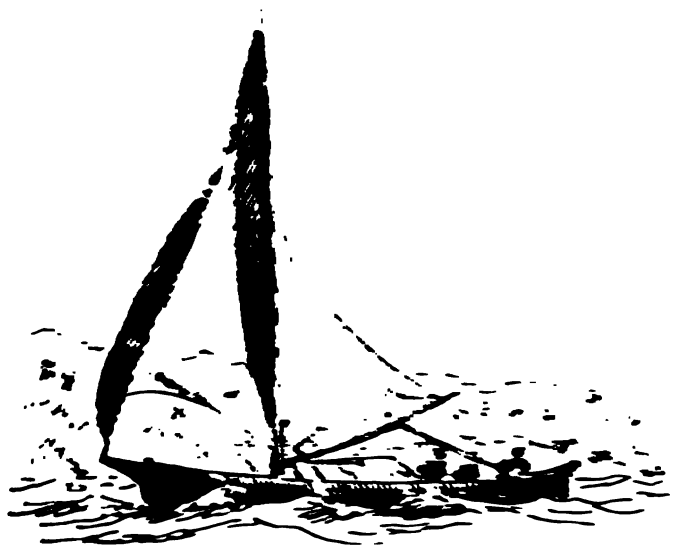
rigging, as already hinted, he is partial to slender, lofty masts, and if his vessel is large enough, he indulges in two masts of nearly equal height, to which is generally given a very smart rake forward. Under Chinese sails, the advantages of which over the dipping lug have been recognised by many on the east coast, the Malay may be distinguished from the Chinaman at sea, when yet hull down, by the equal size of the big sails, and the invariable absence of any mizen. The hull is also low and long, with no many-storied castle aft, but

merely a *kadjang*, or thatch awning, over the raised, overhanging poop, or a simple *dandan*, or gallery. There is something of the yachtsman in the Malay, and he is much addicted to graceful little vanities about the stem-head and stern-post of his small boats; and so greatly does he hold the figurehead in estimation, that a class of boat is often named after the form given to the stem-head. European influence may now be

MALAY, EAST COAST

seen at work, to a greater or less degree, in almost every class of rig in the ports of the Peninsula; but the Malay, more than any other Oriental, has adopted the jib, or three-corner staysail. This essentially modern product of Western Europe he uses not only in the large traders already referred to, but also in the *kolek*, or 'sea-canoe' of Singapore, in which also the old Malay lug has been altogether discarded, especially for racing purposes, in favour of the spritsail. The staysail is recognised as the most convenient form of headsail to prevent excessive gripping, and does not involve the disadvantages of the weight of a mast right in the eyes of the boat.

It will thus be seen that from a variety of [illegible] with which the physical geography and the [illegible] ought of the Peninsula have made it rife, the one simple type canoe has predominated in most of the boats of the Malay Peninsula. It may, in fact, be said that the maritime enterprise of its inhabitants obviously



[illegible]

commenced with the canoe and continued with the canoe, and that its highest form of development has resulted in a craft of larger dimensions, which yet in all essential particulars still remains—a canoe.

The nomenclature employed by the Malays for their boats appears to the traveller at first to be unnecessarily intricate. Closer attention, however, soon shows that the name, as has indeed been already suggested, is very rarely derived from the rig, as is so much the case in Europe, but rather from distinctions, which often seem to the stranger to be comparatively

insignificant, in the hulls or build. Nearly every water-side settlement of any importance having developed its own ideas of ornamentation or of construction, it is not to be wondered at that boats which might well be classed under one head, as far as all essential particulars are concerned, yet come under the observation of the traveller under widely different names, differing often merely with the locality of their origin. For instance, a number of otherwise very similar boats are named (*a*) simply after the form of figurehead, to the fre-

SINGAPORE FISHING CANOE

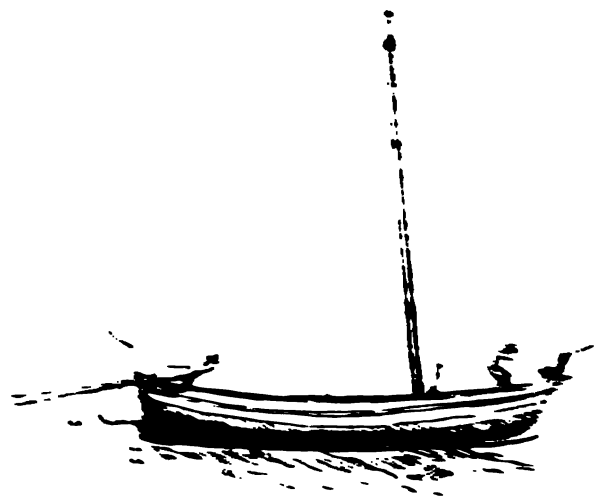
quency of which reference has already been made, *e.g.* the hornbill boat,[1] the crocodile boat;[2] or (*b*) from some peculiarity in construction, *e.g.* the Patani 'half-decked'[3] boat (literally, boat with decked fore-part), or the 'civet-fence'[4] boat, which is nothing but a form of the type generally known as *penjajap*, to which a peculiarly ornamental bulwark or rail is given.

A large number of boats, as might be expected, are distinguished by the use for which they are built, *e.g.* the 'boat for going up-stream,'[5] and various types of fishing-boat;[6] others are of purely local significance,

[1] 'Prahu Enggang.'
[2] 'Prahu Buaya.'
[3] 'Katop Luan.'
[4] 'Pagar Tenggalong.'
[5] 'Prahu Pemudik'; from 'mudik,' to go up-stream.
[6] 'Prahu ikan,' or 'per-ikan'; from 'Ikan,' fish.

[illegible] naming an Indonesian type, while several [illegible] to be derived from European names, e.g. 'skuna' schooner, and 'pinis' pinnace, and perhaps 'kotch' kecch, 'sekoch' sloop, and 'sekar' cutter.

It is noticeable that, in most of their larger [illegible] the Malays have adopted the comparatively [illegible] method of slinging the rudder by metal fittings



[illegible] type, Sumatra

on the stern-post, known about as 'gudgeons' and 'pintles'.

In many of their dug-out canoes in the *kolek* and some of the non-European types of fishing-boats of Selangor and the east coast, for instance, the rudder consists of the simple paddle held on the quarter, or a pebble-shaped rudder slung at the head on a stout upright and held at the neck by a rattan lashing. This, as already pointed out, is the earliest and simplest form of rudder known to man. It was that used, as

e.g. the Kuala Jeram.

noted elsewhere, in the ships of the earliest navigators of the Mediterranean of whom we have record,[1] and it remained, with slight modifications, as the usual steering contrivance of the Egyptians, of the Greeks and Romans, and of the Danes and Saxons and Normans, down to mediæval times. It is much used in some of the craft of the northern portion of the Gulf of Siam, and it may be noted that this form of rudder is always used on the lee quarter, if, as is usual, the boat carries a weather helm, this position giving far greater power and deeper immersion.

The Malays do not use oars to a great extent, except with the bigger-decked vessels. These oars are somewhat heavy about the loom, and have often sharp-pointed blades, shaped rather like a broad angular spear-head. They are generally worked in a rattan grommet to a sharp, quick stroke, any other kind of stroke being impossible owing to the friction in the grommet and the shortness of the oar. The 'standing up and pushing' ('salmon-stroke' or 'sculling') position, common with the Siamese and Chinese and in the Mediterranean, is, on the whole, rarely adopted by the Malays. In the smaller craft, with low freeboard, the paddle is used, the blades in some localities having the same angular spear-shape.

Boat-building

The Malays usually follow the general Indo-Chinese method of construction in the first stages, at all events, of their smaller boats.

[1] *e.g.* the records of craft in Egypt so steered from the time of the third dynasty (about 6000 B.C.), mentioned above.

A selected tree is laboriously hollowed out by the adze until the sides are sufficiently thinned to open out under pressure and the judicious application of heat by a slow-burning ember fire beneath the bottom. The fore and aft ends are roughly modelled with the adze. Before proceeding further, the hull is at this stage frequently soaked for some days in the water. In many parts of Siam and Burma the presence of a monastery can be almost certainly predicted by the little fleet of hewn modelled hulls lying sunk beside a landing-place, a sure sign of the boat-building propensities of the brethren of the yellow robe close by. When sufficiently soaked, the opening-out process begins.

Various methods are used for the purpose of opening out the dug-out. In some cases water is placed inside the dug-out hull, and hot embers are placed upon the ground underneath it, and kept at the required temperature until the sides have opened out sufficiently to take ribs, knees, and cross-pieces. The sides, in falling out, come down to the level of bow and stern, and your up-river canoe is now complete.

Another method of opening the dug-out hull is often used. To the perpendiculars on each side cross-pieces are securely lashed under the hull. A similar number of cross-pieces are placed above the hull, over the lower ones, and connected by a strong double rattan rope. Through these rattans hardwood levers or handles are placed to give a purchase, and are then twisted round and round, bringing the ends of the cross-pieces together. This pressure is kept constant while water and hot embers are applied, as necessary.

Two dug-outs may sometimes be seen being cut from one log; the inner and smaller one is worked out by the driving of stout wedges. In order to facilitate the heavy work of driving home these wedges, a low scaffolding is erected alongside one of the canoes for the wedger to stand upon, and the log itself is turned over till it lies at a convenient angle, by means of a lever placed underneath it, the end of the lever being raised by a rope made fast to a windlass. Sometimes a simple floor or keel-piece is used, on which the boat is subsequently built up. In this case stem and stern pieces will be worked in. The sides are rabbeted into the floor-piece, and the upper strakes built on as in an ordinary carvel-built boat. The simple dug-out form having been obtained, the upper strakes can be built on, the ribs being carried up to receive them. For this purpose the planks are bent by various ingenious applications of levers and hot embers. Many clever devices are used by the Malays for getting the necessary power, and the boat-builder has many arrangements of stout upright pegs about his shop or in his compound, set to all possible curves and angles which he is wont to use.

In the inland sea of Singora many dug-outs may be seen, built up with strake on strake, in the most unblushing way, without any attempt to hide the roughest method of boat-building perhaps to be seen anywhere. No attempt is made to work in stem and stern posts. The ends are blocked across a foot or two inside the end of the boat's nose or tail, if one may use the expression, thus forming thwartship water-tight bulkheads. The two or three strakes,

often variously coloured, are built on, and the topmost one is utilised to give a finish to the whole, by being extended and turned up forward, and carried out to form a steersman's staging some way aft. The almost submerged noses of these boats, which are really more Siamese than Malay in type, have generally a most pathetic expression of protest. It reminded my imaginative Siamese of the wistful look on the face of a puppy when thrown into the water for the first

LAKE BOAT, SINGORA

time. They draw very little water, and are used all over the lake, being able to navigate the shallows which now form so large a portion of it. They are usually rigged, not with the Malay lug, but the Siamese high-pointed standing lug, a far handier and handsomer sail. For these the very light yellow matting is used, which is almost universal in the upper portion of the Gulf of Siam.

There is a further method of warping planks by aid of a fire, by which, when the planks are ready to go

on as upper strakes, they are fixed in position, and built up upon the dug-out keel and floor portion of the boat, which has already been opened out to the required extent. These strakes, as they are put on, are held in position by a system of bamboo ties, and secured by rattan lashings.

The last stages of the Malay boat differ with the district. In many cases a beautiful finish is given to the fittings, and a shining polish to the under-water

'KAKAP JERAM,' SELANGOR

portion of the hull. At this stage half the village may be found at the boat-builder's, polishing or criticising with much energy and enthusiasm.

Peninsular Types

Among the more noticeable types of boat may be mentioned the *Kakap Jeram.* This is a typical Malay fishing-boat of the Selangor coast. Kakap means 'spy' or 'scout,' or 'look-out,' and Jeram is the name of a big fishing-village in the Kuala Selangor district (of Selangor), from which this boat took its name of

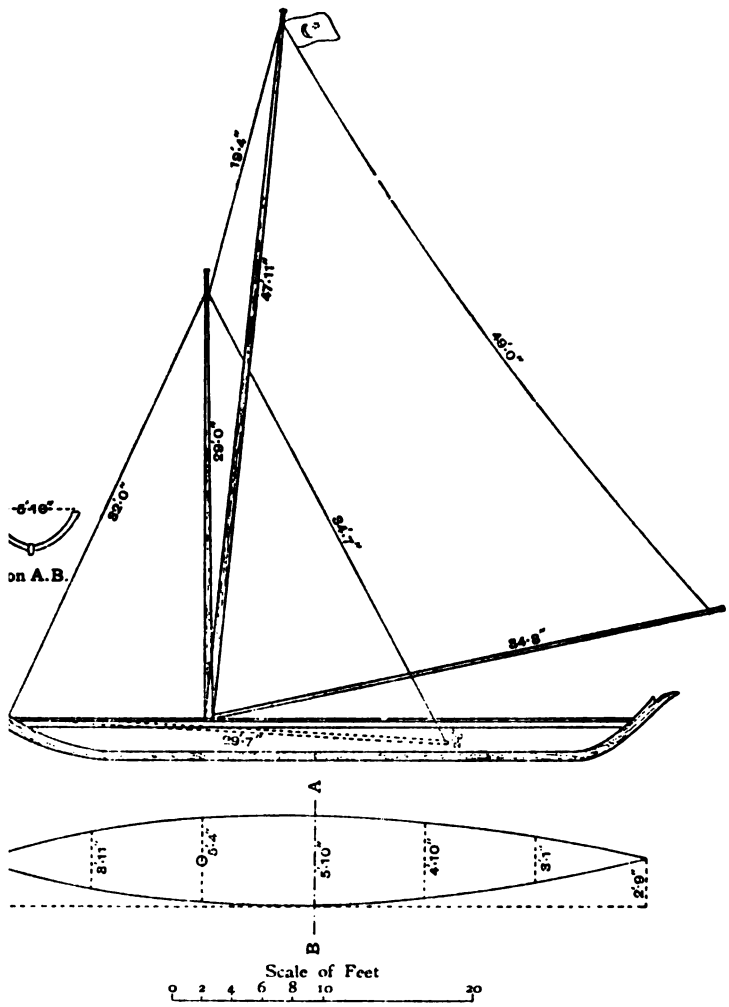
the Jeram scouter. The rig is practically the same as that of the *sadir*. The sketch shows the figure-head and ornamented stern-post, and the long paddle rudder already described. The gratings on which the crew are accommodated are shown, and along each side forming the gunwale may be seen a wash-strake formed of strong lacing of split bamboo strips, stoutly sewn together with bamboo withies, and filled in with palm-leaf, the whole held in position by lashings to knees brought up from the boat's ribs. This is a very usual form of wash-strake in Malay boats and is much used by the Orang Laut, or sea-dwelling Malays of the west coast. It is strong, light, and effective. It is given considerable flare at each quarter. The equivalent of the lumber irons used in European fishing-craft is provided by loops of rattan on the starboard side, and here the punt-poles and other spars are stowed. Forward will be noticed a peculiar form of bits, stretching athwartships, used for winding the cable upon, as well as bitting it;[1] it is used by the Siamese as well as by the Malays.

The *kolek*[2]—literally the 'rocker' or wobbler, from its crank build—is a very common form of small canoe. The term *sampan*, a word of apparently Chinese origin, which is given generally to any small, especially Chinese, boat, is also frequently applied to these canoes. The *kolek* is the usual form of small sea-fishing canoe, the stem and stern posts are generally high and pointed, with some decorative paint-work

[1] Dimensions: 18 feet by 7 feet by 3 feet; 1 foot freeboard; capacity, 2 bags; crew of 3; length of mast, 23 feet; material, meranti.

[2] Klinkert says: 'The small variety for one person only; but big ones hold ten or more persons.'

ther ornamentation. It is generally carvel-built, a shapely hull and prettily rounded forefoot;



MALAY 'KOLEK' OR SEA-CANOE—SINGAPORE RACING TYPE

(By kind permission of the Editor of the 'Yachtsman')

there is very little bilge, and consequently small ility, which, combined with the low canoe-like board, makes these boats somewhat tricky to the

novice. The peculiar 'crabs' eyes' are frequently to be seen in these boats. They carry single or double lugsails, according to length. In the former case, the tack of the sail is usually belayed at the mast, so as to form a standing sail. In these little boats the young Malays generally get their first lessons in sailing. In the longer boats, with larger crews, two dipping lugs of the usual Malay type are generally preferred.[1] Some of these boats are said by the Malays to carry the 'sabang' sail. Klinkert describes this as

45-FOOT RACING 'KOLEK,' SINGAPORE

'the sail of a small boat which has no tackle except a brace, but has instead a kind of "sokong" (= prop).' This presumably means a spritsail, set up by its spreet —no other sail so exactly answering to this description. In Singapore the *koleks* have developed into long boats used a good deal in racing, rigged with large cloth-made spreet mainsail and stay foresail, and manned by a large crew of twenty or more, who act

[1] Dimensions of five-man boat: Length, 24 feet; beam, 4 feet; depth, 2 feet; freeboard, 1 foot; capacity, 20 pik; length of mast, 24 feet.

as live ballast out to windward. In a fresh breeze they stand on the gunwale, and, holding on to man-ropes leading from the mast, lean out all their length to windward. These boats are very slippy with the wind abaft the beam, for, with a length of 45 feet, they have a beam of not more than 5 feet 6 inches, and a draught of about 2 feet. But they have no grip for weatherly work. The increase of the lateral resistance by the introduction of a centre-board would probably result in enabling these boats to perform well on a wind in smooth water.

The *Lancha* or *Lanchang* is an approach to a sea-keeping type of vessel. She is rigged with the ordinary square-headed dipping lugsails, which are of nearly equal size as in the *penjajap*. The lofty slender masts are well stayed, and are stepped in tabernacles of a kind which is common to the Malays, and both are raked forward. The sails are made of the screw-palm with cloth tops, and there are main and peak halyards.

The vessel has a clipper stem, over which the fore-gallery is built for the anchors; this also acts as a bumkin or bowsprit for spreading the tack of the foresail. A comparatively commodious deck cabin and stern gallery are added over the straight stern-post. The hull is carvel-built on very European lines, but has no great depth.

In Selangor it is affirmed that the Lanchang is a type of boat which was frequently owned by Malay Rajas on the Sumatran coast, and to this day in Selangor it is this royal vessel which is dedicated to the service of the spirits, when the medicine-man invites them to sail away.

The *Lanchang To'Aru* (Bandar) is very similar to the other Lanchang in hull, but is fore-and-aft rigged with the long topmasts and other peculiarities mentioned above. To'Aru was one of the council of four great chiefs of Selangor who in former days had much power, to whom the election of the Sultan was intrusted. He was the most powerful of the four, and took his name from a district called Aru[1] in Sumatra, from which he came over to settle in Selangor. Bandar was the site of his home on the Langat River. He appears to have been a go-ahead seaman and to have realised the advantages of the European fore-and-aft two-masted rig even for vessels of strictly Malay build.

The *Nadir* is a shallow-draught fishing-boat of the Malacca coast, carvel-built, and with straight stem and stern posts of European type.[2] The rig is a single lug, the tack or fore-end of the boom being made fast well forward of the mast on the weather bow. The luff is set taut by a spar bowline fitted in a cringle, the after-end coming to the deck abaft the mast. There is a peak as well as a main halyard, both in single parts; the sheet and vang are in one piece, and lead to the helmsman aft. There are spear-bladed paddles, and the *kadjang*, or attap-thatch shelter, used by the crew

[1] *Aru* is probably the same as the word *Aru* (also *eru*, or *'ru*) which is the name given to the Casuarina. The Siamese on the east explain the presence of this northern-looking tree, which grows in beautiful fringing groves along the sandy coasts of the Peninsula, by the legend that it was brought by the drift of the north-east monsoon, which impinges full upon the coastline, across the China Sea from Japan. It is a tree of good omen, for it grows on non-malarious spots swept by the clean sea wind.

[2] Material: Kelidang; dimensions, 24 feet by 6 feet by 3 feet 3 inches; 1 foot freeboard; capacity, 1 koy; crew of 5; length of mast, 30 feet; screw pine-leaf sail.

when riding to an anchor, is shown rolled up on the gratings. The sail is reefed as in the Siamese Rua Pet by rolling round the main boom to the height required by help of a wooden pin at the fore-end which is used as a lever. A rope parrel, as is usual in these sails, keeps the yard to the mast. Such a boat would be enormously improved by centre or lee boards.

The *Prahu Pelet* (*qu.* Eng. pilot) is a thorough-going Malay as regards hull, with a low-cut imitation of a European gig's dipping lug, with the addition of

RANGUN LIGHTER

the usual Malay boom and the vang to the yard. These vangs are always necessary owing to the sails not being of sufficiently stout material to carry a stout luff-rope, by which the sail can be set up taut to stand on a wind, as is done in Europe.

The *Tongkang Malayu* is the Malay lighter of Singapore. This ketch rig is now much used in the cargo lighters of Singapore, and is a handy one for a small crew working about a crowded anchorage liable to sharp squalls. Mainsail and mizen are set by an outhaul along the gaff, and are easily and rapidly taken in by being brailed to the mast. Many of

these boats may be seen any day working in Sing roads. There is also a class of lighter in Sing rigged with a big flat-headed lugsail, somewha

SINGAPORE TONGKANG

similar lighters at Rangun. They are big, po boats, well suited to their work. The rig is har going alongside ships, as involving very little ge here again the China lug is often used.

FLOOD-TIDE ON THE ME NAM

To face p. 358.

CHAPTER XI

THE GULF OF SIAM

SOUNDS not seldom bring linked with them strange memories. Sitting in a London hansom with a fast trotter between the shafts, an old Siamese air called the

BEATING IN FOR SHELTER

'Trotting pony' comes back to me with its quick rhythm and sweet, weird monotony.

It brings old loved pictures of white sands, blue sea, and green islets; I hear the swaying palm-tops chattering in the breeze, and the tall yellow matted mainsails of the boats rustling as they come head to wind to their anchors. Before my eyes again the white crests hurry off shore to the open sea, and in my

ears the monsoon wind roars down across the beach forests from the purple mountains inland.

The sun, up some three hours from his bed, hits fiercely; it licks the water from the shining hulls of a group of trading luggers, and leaves them caked in the salt they threw about themselves when beating in from the stormy offing.

And in the squealing tones of a two-stringed fiddle somewhere among the fishing-huts behind the beach the merry jig tune goes ever on; and the boats' crews squatting out on deck, drying their few garments, and cooking their morning rice, form an appreciative audience.

Among these boats are several distinct types of great interest, second to no craft of Eastern waters in strength of build, in sea-going qualities, or in appearance.

Perhaps the most typical craft of the Gulf of Siam is that known as *Rua Pet* (duck-boat, so called, it is said, from the similarity of its under-water body to that of a duck). This boat is remarkable for its high overhanging spoon-shaped bow and its very graceful standing lug mainsail, which combine at a distance to give her quite a European appearance. The foresail, however, is not of the staysail type, but is a little standing lug set on a small light mast right up in the eyes of the boat. There is no standing rigging to this mast, and it does not add materially to the weight forward: a halyard, sheet, and vangs which lead to cleats on the main rigging are the only ropes. The mainmast, however, is a stout spar stepped a little forward of the midship section, and raked well aft. It has a pair of

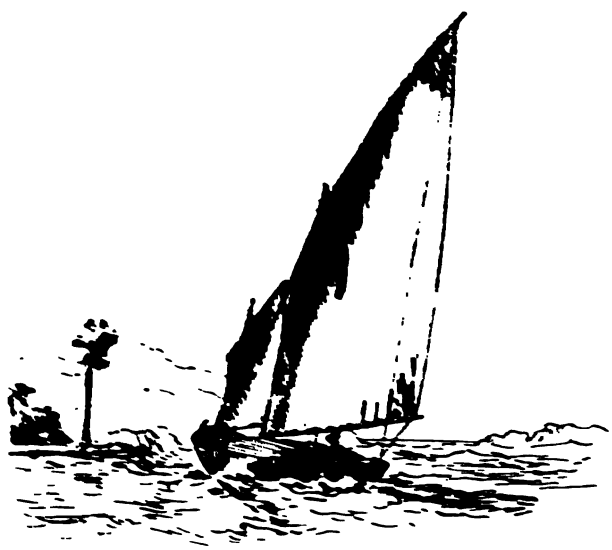
rattan-stays on each side leading to the masthead. There are generally two sheaves aloft for the main and peak halyards, and a rattan traveller holds the long-yard to the mast. A downhaul at the fore end of the yard is generally twisted round and round the mast, thus keeping in the heel at the required angle, and taking the thrust of the lower end of the yard off the luff-rope,

'RUA PET'—BEATING

which, as usual in native sails, is not stout enough to take a great strain.

The shape of hull is unique, and betrays the fact that the boat is a sailing-boat *par excellence*, designed for navigating in rough waters. It is thus in direct contrast to the canoe form of the Malay craft, which were in the first place paddling or rowing boats in which sails came rather as an after-thought. The *Rua Pet* is essentially a deep-hulled sailing-boat. Her broad flaring bows rise high, and are shaped to the overhang

form which has been, in the last ten years, so generally adopted for racing-craft of all sizes in European waters. The stern is sharp-pointed; the rudder is shipped on the stern-post, which curves away down to the keel at a considerable angle. The bottom of the boat is rockered, and she is so trimmed that the greatest draught of water is well abaft the midship section, the



'RUA PET,' EASTERN SHORES

boat thus turning very smartly. Whichever way it is looked at, the hull presents beautiful curves to the eye; there is not a straight line about it. The result is just such a form as the sea loves, and uses kindly in its wildest moods.

The buoyancy and sea-worthiness of these boats is remarkable, and as long as they are kept with their high bow to the sea they can weather anything. Aft, especially when loaded, the freeboard is often rather low.

The best of these boats are generally built at the various small ports along the eastern side of the Gulf, such as Bang Pra, Rayawng, etc., and the wood used in their construction is that of the wonderful forest tree known to the Siamese as *Ton Takien* (Burm. *Thingan*), which is found in all the forests of Indo-

'RUA PET,' GOING FREE

China growing to an enormous size, and in worm-defying power is comparable with teak. It is a heavy wood, and therefore expensive and difficult to bring out of the forest. Wood pegs are used throughout the construction, and the planking is finished flush with the stem and stern posts, as in the Yorkshire coble, and not rabbeted into them.

In common with not a few other Siamese native craft, the Rua Pet is built with flat stem and stern

posts, having at the gunwale a width of nearly a foot and tapering downwards to below the water-line. This method of construction seems to have been a result of Chinese influences, coming by way of Anam. In many forms of Chinese sampans, and other small boats, the flat stem and stern post broadening above the water-line to the gunwale is common; and in

AT SEA

Anam a boat similar apparently in nearly every particular to the Siamese Rua Pet is known as *gaydiang*.

If Anam be the birthplace of this type, its admirable sea-going qualities will be explained; for no worse sea can be met with than that running along that coast in the north-east monsoon; and the Anamese, who are considered by their neighbours, not without reason, to be lacking in most good qualities, must have at least one to their credit.

The boats are ballasted with stones, over which a flooring is placed for the accommodation of cargo and crew. A slight decking, which, as is usual among native craft, is not water-tight, is built across the boat from the stem to the mainmast. Abaft this, a coach roof of dried palm-leaves and bamboo laths is built from gunwale to gunwale to within six or eight feet of the stern-post. This cover is varnished over and is perfectly water-tight, and underneath is the hold

AT SEA, SOUTH-WEST MONSOON

and cabin, roomy and comfortable, though ill-ventilated and hot in a noonday calm.

The space at the stern has a floor or grating for the helmsman and crew, and under this the water-jars are usually stowed for the voyage.

A pair of sweeps are carried, and are used in the ordinary standing-up position common in the Far East. A couple of anchors, composite wood and iron grapnels weighted with stones, are stowed forward. When paid out the cable is nipped in a very clever way by a small crooked wooden lever, the end of

which is pulled over and held by a rattan grommet slipped over it.

The sails are made of rectangular pieces of yellow palm matting, and are very light.

They necessarily have a boom laced along the foot like all native sails made of this material, and a vang assists to trim the yard. The sails are always furled aloft along the yard, by rolling the foot of the sail up on the boom, and at the same time hauling it out forward. The heel of the boom is then secured to the foremast, and a line frapped round the sail keeps all snug. The effect is very much that of a furled lateen, and is graceful to the eye.

Reefing is also done by lowering the yard and rolling up the boom to the required height. The man doing this uses a short wooden handle thrust through a grommet in the fore end of the boom as a lever, and when lashed in position to the mast this prevents the sail unrolling. So even our latest patent roller reefing-gear is no new thing.

When riding at anchor, in heavy weather, the main-yard is often lowered on deck; but it is a huge unwieldy spar and takes nearly the whole length of the boat. In port, the sail is always smartly unbent, rolled up in a big ball, and stowed away below.

The sails are reckoned to last a twelvemonth, but in their latter days are generally very ragged and full of holes. The Siamese boatman, however, does not object to this greatly, as it saves reefing; in fact, these matted sails are preferred to cotton or duck, for the very reason that the latter are considered to press a boat down more, while the mat sail,

unlike the heavier matted sail of the Malays and of many Chinese junks, provides an automatic relief to the boat in a fresh wind, by allowing a large proportion of its strength to pass right through it. At the same time, in light winds this kind of sail seems to hold the lightest air. I have watched one of these

COAST JUNK, RIVER ME NAM

sails being bent to the yard and hoisted up, looking through which one could see the sea and sky on the other side so distinctly that one felt quite incredulous at its ever being able to take one safely to a destination between two and three hundred miles away. Yet we made our passage, our average run in all conditions of wind and weather being a hundred miles a day. Our worst experience was from a sharp 'nor'-wester' at the head of the Gulf; we kept the whole fore-

sail set, but the mainsail was reefed until the yard was halfway down from the sheave-hole. Thus trimmed she carried an easy helm, and sailed very fast and dry; but the light mat sails could not stand flat enough in the wind prevailing to enable the boat to look up very close.

The foresail in these boats is seldom trimmed or reefed, and is merely a steering sail; as soon as the

A SNUG ANCHORAGE, SHELTER BAY

wind freshens so much as to increase greatly the boat's weather helm, the mainsail is reefed.

There are no labour-saving devices whatever, and it takes the whole strength of the crew of two or three men to swig up the mainyard or get in the sheet, the boat being necessarily luffed to the wind for either purpose.

In size these boats vary considerably. The smaller ones, locally built and used for fishing, are often not more than 20 feet long; but trading boats run much larger.

The dimensions of a large boat of this type building at Bang Pra were:—

Length over all,	50 feet.
Beam,	15 feet.
Depth outside,	7 feet 6 inches.

She was to cost nineteen *catties*, or roughly £95, when finished, and her hull would not require any general overhaul for at least thirty years. The pegs used in construction were all of hard redwood, the planking was of 1½ inch *thingan*, and very accurately shaped.

When on a propitious day the mainmast was stepped, and the main rigging, consisting of jungle rattans, finally set up, the necessary offerings were made to the various spirits concerned with the boat's welfare, and she was considered to have commenced life.

The average size and price of these boats is somewhat lower than that given above. At Rayawng, further down the coast, thirty to forty of them are built and rigged ready to sally out at the end of each onshore monsoon, to race for the Bangkok and up-coast market, and their prices range from ten to fifteen *catties* (£50 to £80).[1]

The other principal type in the Gulf of Siam is the *Rua Chalom*, a name applied to all sailing-craft of the Gulf without distinction of rig, in which there are the high stem and stern posts, into which the planks are rabbeted in the ordinary way. While the *Rua Pet* is deep-hulled and two-masted, and is always the boat

[1] They run up to 6 *wa* (39 feet 6 inches) in length, with 6 *sawk kub* (18 feet 8 inches) beam, and a draught of 3 feet 4 inches to over 5 feet when loaded, the outside depth being 6 feet to 7 feet.

of the Siamese, the *Rua Chalom* is a long, shallow-draught vessel, and is more favoured by the Chinese

COASTER IN A SQUALL

and Luk-Chin[1] fishing population of the coast. The smaller boats of this type are used entirely for fishing

SEA-GOING 'RUA PLA'

purposes. They row well, the crew always standing up on the gratings to the work, and pushing the oar

[1] The name given to the children of mixed marriages between Chinese immigrants and Siamese women.

before them. Under sail they carry one large standing lugsail, which is reefed in the same manner as that already described, but is seldom furled aloft except in the bigger and deeper boats. As in the *Rua Pet*, there is no purchase to halyard or sheet, and it often takes every bit of five men to set the great mainsail.

A peculiarity of these boats is the steering gear,

RIDING IT OUT

which consists of two rudders, slung at the upper end on stout uprights at the quarters, and held in just above the blade by a stout piece of rattan. The lee rudder is that generally used under sail, both because of its deeper immersion, and the greater power it gives to counteract the boat's weather helm. In running before a heavy sea both are used, and when lying at their fishing-stakes it is not unusual to see one unshipped and set up aft to act as a mizen to keep the boat's head to sea. In port they are slung up

at the quarters, and, flat side uppermost, they are useful for fish cleaning or cutting bait, or for eating the morning rice off. This method of slinging and using quarter rudders is the oldest used by men in sailing-craft, and is the first development from the simple paddle rudder which has in all ages been the first method of steering boats.

The simple paddle or steering oar may be seen in every stage in Siam. The king's state barge is steered by two men with long steering paddles in precisely the

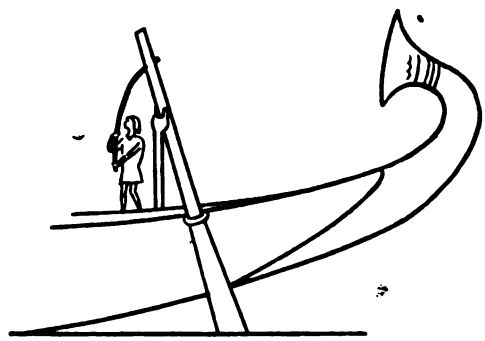
'RUA CHALOM,'

same way as was done in the case of the Egyptian boats of the Third Dynasty, 6300 years before Christ.[1] The long, fixed steering oar of the up-river cargo carrier of the Lao country is used on the same principle as that of the more developed steering paddle in the Egyptian ships of the Punt Expedition, 1600 B.C.,[2] which simply turned on its own axis. The slung quarter-rudders of the *Rua Chalom* are the same as those used in all the Roman and Greek merchantmen

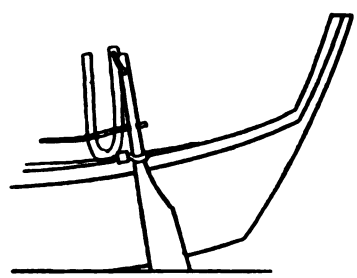
[1] Villiers Stuart's *Nile Gleanings*.

[2] Holmes's *Ancient and Modern Ships*, and Torr's *Ancient Ships*, and other works.

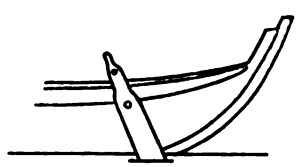
and galleys from 500 B.C. downwards, by the Norsemen and Anglo-Saxons a thousand years after Christ, and



QUARTER RUDDER—EGYPT



QUARTER RUDDER—SIAM



QUARTER RUDDER—NORSE

QUARTER RUDDER—ROME

by mediæval seamen down, at all events, to the fourteenth century, when the rudder appears to have been first slung on the stern-post, both in the North and in

the Mediterranean.[1] It became general in Europe after that date, but prevailed still in the Far East for boats with high stern-posts and shallow under-water body aft, such as the *Rua Chalom*, for which it was peculiarly fitted.

The smaller *Rua Chaloms* are manned by three, or preferably four, men. These are exquisite little craft, and to see them carrying on for the Bangkok market in a strong breeze is a goodly sight.

While they handle the boats very smartly under sail, the tall, dark-burned crews are seen to even finer advantage on a hot airless morning, when standing to their great long oars they force their boats with the whole weight of their glistening bodies through the calm, streaked water. At such times, beating the water in long, powerful strokes together, about eighteen to the minute, bending their bodies until almost horizontal at the finish, and springing smartly to an upright position again poised on the back-placed leg, they maintain a speed of six knots or more for a couple of hours without a spell.

The larger sea-going fishing-boats are between 40 and 50 feet long, and at the waist often have an additional strake or two built up for about two-thirds of their length, to keep the water out when heeling, the freeboard when loaded up being rather insufficient at this point. The contrivance reminds one of the canvas screen fitted along the waist of the low-sided Greek boats of the Aegean.

They carry a crew of seven men, and are engaged

[1] The Poole seal of 1325 first shows this method of slinging the rudder, and Charnock figures a Venetian galley of this century with a similar rudder.

principally in the Pla-tu fishery, which takes place on the east and west coast of the Gulf in turn, as each shore gives shelter to the fish from the prevailing monsoon. Elaborate fishing-traps are built each season at great cost and trouble, as soon as the onshore winds begin to give way to the offshore monsoon. Converging lines of stakes half a mile long worked into the mud and sand of the bottom, lead to the central trap, a large strongly built enclosure of interwoven stakes. So solidly are these built that sailing at night necessitates a very sharp look-out, when in shallow soundings, among them, as collision will mean loss of a bowsprit at least, if nothing worse.

A good deal of seining is also done by these boats, one or two of the smaller three-men boats being in attendance. The results of the catch are dumped into big tubs or pits, where in the course of a few months they mature into that popular delicacy called 'balachong' or 'kapi,' dear to the heart of every properly educated native of the Indo-Chinese peninsula. It has other uses besides tickling the palate of the epicure, and stimulating the olfactory nerves of the European traveller; for it is said that the number of depôts along the coast have saved the Siamese Government large sums annually which would otherwise have had to be expended on lighthouses, the odour even on foggy nights carrying further than the brightest light, and warning the mariner off the coast far more effectually.

One peculiarity of these boats remains to be noted. Their rounded shallow form of hull makes th
well over the wide mud expanses exposed
portions of the Gulf at low water.

fair wind, each boat takes its own well-worn track leading to the long fishing stages built out from the land, and with a man or two out over the stern on their broad wooden mud-skates to steer, they sail gaily in to their mooring, half a mile or more as may be necessary.

The largest form of *Rua Chalom* used for trading is two-masted, and a much deeper vessel than the fishing-boats. Sometimes the double rudders also are

'RUA CHALOM,' CLOSE-HAULED

discarded, and a single rudder is shipped in the ordinary way upon the stern-post. The boats then become much more allied to the small Chinese two-masted trading junk, and often have the China sail instead of the Siamese form of sharp-peaked lugsail.

The strong coach-roof abaft the mainmast is retained, and, in addition, the helmsman is often accommodated with a peculiar little shelter right aft, the floor of which is built out considerably on the after-side. This is the embryo of the more commodious stern galleries of the true junk.

One other peculiar craft is met with on the Gulf, called simply *Rua Ta*, from its enormous cod-like eye. It is apparently Cambodian in origin, and comes from various small ports down the east side. It cannot claim to be very graceful, and is a lumbering hull, with grotesquely painted fore and stern galleries. It generally is rigged with the form of lug common in the Gulf, only with less peak, and has a mizen. But the China

CAMBODIAN AT SEA

lug is adopted in some instances, with advantage in the set but the disadvantage of greater weight aloft. They run up to 60 feet in length and have large carrying capacity, but are neither fast nor weatherly, nor as taking to the eye as the other craft of the Gulf, or the true junks of Southern China.

Just as on the mainland of Indo-China the Chinese have played a very prominent part for centuries, so on all the seas that wash the coast of the great peninsula their ships and their seamen have maintained regular

navigation. The junk rig, described elsewhere, is as common as any other in the Gulf of Siam, although the great increase in steam tonnage has given the death-blow to the great junk trade of thirty years ago; and the five-masters, like the square-rigged ships which used to be seen beating out in crowds over the Me Nam bar in the old days, have now almost disappeared. Besides the large three-masted junks of several hundred tons, which still come round in considerable numbers from

CAMBODIAN COASTER

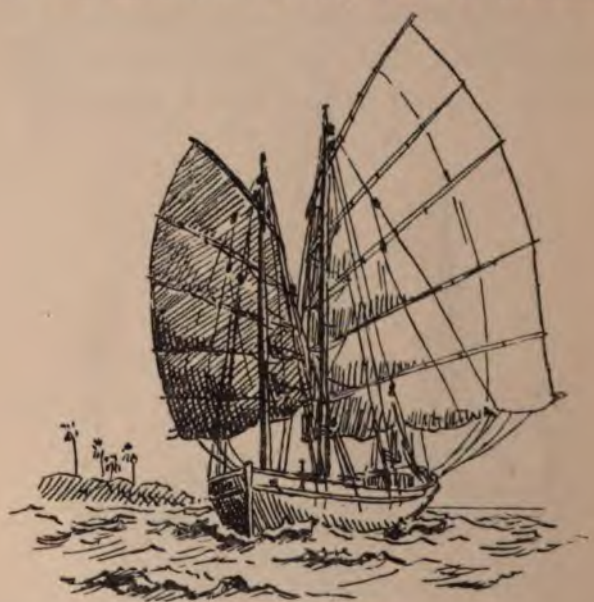
southern ports in the China Sea in the north-east, and return with the south-west monsoon, many small junks survive, and indeed show no sign of disappearing from the Gulf. They are nice, handy little craft, from 30 to 50 feet long, generally two-masted, and manned by what is for Chinese a small crew of four or five men. They are genial, pleasant fellows to sail in company with, these Chinese sea-coast settlers, and are full of fun and good humour. Beating down under the lee of the Malay Peninsula, in the south-west monsoon, in company with half a dozen of these little traders, one

may have opportunities of seeing some very fine seamanship exhibited by these men in the terrific squalls which break at that season. At night, cross-tacking with these boats is rendered picturesque by the flares which they light each time they go about, to appease the devils of the sea. In my own boat, a

A COAST TRADER, EAST SHORES

thirty-six footer, while engaged on duty in this locality, I have followed these boats in the dark, warping against the current into the river harbours along the coast. They have the aid of three or four crews from neighbouring boats, and their illuminations on the poop, their splashing oars and quants, and the pandemonium of yelling, chorus-singing, and gong beating,

awake the whole jungle neighbourhood for miles; though, as our exhausted crew found to their cost, it all seems to do but little towards appeasing that devil of a current. The absence during part of each month of one of the two usual semi-diurnal tides, a phenomenon also observable in the Gulf of Tonkin, makes



'LORCHA,' RUNNING

getting in and out of these badly marked and ever-shifting channels a matter often of danger and always of difficulty. For the 'live' tide, like the owl, invariably chooses the night-time for its walks abroad, being apparently shy of observation.

Reference must be made also to a very distinctive craft used in Bangkok, the *Lorcha*, or sailing lighter. These craft run to two hundred or more tons, and are used to carry rice out over the bar of the river to ocean ships completing loading in the roadsteads at

Kaw Si Chang or Anghin. The hull is built in Bangkok, of the good teak wood of the country, on European lines; but the rig is that of the usual Chinese three-master, for facility of management by their Chinese crews. They are fine, powerful vessels, and some sixty or more are owned in Bangkok by the various more important exporting firms. Canvas was introduced for the sails by my old friend the late

'LORCHA,' CLOSE-HAULED

Captain Hicks, in place of the red-brown matting, but it is doubtful if its greater durability is sufficient to make it cheaper in the long-run. The matting sails only last a year, and sometimes get so full of big holes as to be dangerously near carrying away completely in a hard blow after eleven months' wear; but they are certainly more picturesque and, it is said, lighter for handling.

On one occasion, when going on duty for the Siamese Government, I sailed a boat thus rigged, but

without the mizen, from Bangkok to Singora in the Malay Peninsula and back, a distance of some twelve hundred miles. She was an old teak steam launch built for the Me Nam river, and was about 36 feet long over all, but leaky, and narrow and crank for her size. I had a young Siamese officer, my assistant surveyor, with whom I had been many journeys, who shared the cabin with me, and the crew consisted of

SIX HUNDRED MILES AGAINST THE MONSOON—ALL SAIL

my Siamese servant and boat-boys. Every Siamese is used to a boat, but only two of them had been to sea with me before. They turned out splendid sailors, and endured the discomfort of a beat of six hundred miles against the monsoon with that cheerfulness which is characteristic of the Eastern, and makes him the best fellow-traveller in the world.

We put the handiness of the Chinese lugsail to a very practical test in the squally weather of the

rainy season. The monsoon wind is ever varying in force and direction in the Gulf of Siam, broken as it is in its passage from the Indian Ocean across the high ranges of the Peninsula. At night a very sharp watch had to be kept for squalls, and simplicity and quickness in reefing and 'making' sail proved to be of the utmost value. Unless the night was unusually fine we never carried the jib, a rare sail in these waters and our special pride, but had one batten of the main-sail down in the topping lifts, and whole foresail.

REEFED

The boat was then quite easy for one hand to manage, and as we were all suffering from malarial fever, it was important not to have more than were absolutely necessary in the deck-watch. Black squalls would threaten and batter us, or would pass away to leeward some miles ahead or astern, always, however, increasing the wind and the sea. When one of these was approaching, all that had to be done was to take a turn of the tiller rope, go forward to the main halyard, and lower away until so many battens were lying snugly in the topping lifts; then similarly with

the foresail. Both the sheets would need shortening in a bit, and the thing was done. The watch could return to the cock-pit, take a cast of the lead and a look at the chart, wrap up in his oilskins again, take a last look round through the night-glasses, then bow his head to the stinging, blinding onslaught.

As an instance of the kind of weather experienced, I give an extract from the log, the day after we started back from Singora, when I had finished my duties:—

August 21—8 A.M.—Westerly gale all day. Posted letters. Getting ready for sea; awnings and boat-boom in; running rigging rove; Berthon dinghy and gear stowed; unmoored ship, etc.

4 P.M.—Got under way. Squalls off the hill, very strong; set three-reef main and two-reef fores'ls, and reached up the harbour to clear fishing-stakes; turned and went bowling out; awkward back-squalls under the Head. Cleared stakes and went out down the channel. Wind outside N.W. 4, and a short tumble of sea breaking; flood making up against it. Very dirty-looking to windward.

6 P.M.—Tacked inshore and kept her going easy till supper cooked (rice and salt fish curry, rice and sugar pudding, and tea). Wind went to W.N.W. 3; set all sail along the coast on port tack against head sea; this and head winds seem to be our fortune.

Midnight.—Turned out, called by Yen. Very dark to Nor'ard spreading out our way. Wind N.W. 3. Took in jib; tacked ship, four-reefed main and foresail. Sent boys below. Came on to blow heavy with tremendous rain for 1½ hours, by which time fairly under lee of the land. Everything soaked. Very cold.

August 22—1.30 A.M.—Wind W. Tacked ship and shook out two reefs in both sails.

4 A.M.—Moon setting; very dark but fine, and water smoother. Shook out whole foresail.

6 A.M.—Turned out the rest. Wind W. 2-3; set whole sail, and got breakfast as soon as possible. A Malay penjajap astern, and a big Malay (with China sails) outside. Dull-grey cloudy sky, but finer-looking. Only damage last night was breakage of

big thermometer. As we tacked in, lots of seining parties along the shore, with their long canoes, shouting and hauling; small temporary fishing cottages under the Casuarinas; at the back, low jungle.

9 A.M.—Aneroid 30·09; wind W. by S. 2, sunshine. Singora hill still just visible astern.

10 A.M.—Freshening. W. 3-4, going grandly.

11 A.M.—Took in foresail, passing big villages. Clouding up and rainy-looking.

Noon.—Aneroid 30·02; thermometer 80° Fah. off Tung Ranawt, thirty miles from Singora Island. Freshening. Took in jib; set three-reef fores'l and four-reefed mainsail. Wind hauling N.W. 6.

1.30 P.M.—Close-reefed plunging into it, blowing hard, squalls to south'ard.

2.30 P.M.—Shook out two reefs. Wind W. 5.

3.30 P.M.—Took down two reefs again. Wind W. 6, squalls to Nor'ard. Going fairly dry.

4 P.M.—Close-reefed: blowing harder than ever, W.N.W.

5 P.M.—Shook out two reefs. Wind W. 5, dull blank wall of blue cloud over Lakawn mountains, showing their 6000 feet peaks far to the north-west. Everything same cold steel-blue colour.

6 P.M.—Got supper, and very glad of it, as all very chilled.

6.30 P.M.—Had all sail on her. Weather finer.

We reached Lakawn Roads next morning, meeting only one heavy squall during the night, which lasted some hours.

On only one occasion, in the upper part of the Gulf, were we reduced to less than four reefs. A very bad squall struck us before sunset, and although all sail was off her, and we had only the bare masts and the bunched-up sails lying in the topping lifts to hold the wind, we were nearly on our beam ends for an hour. We all but lost the Berthon stowed on deck; but were able by degrees to hoist up one batten of the mainsail to keep her head to sea. During the rest of the night we beat to windward under four reefs.

With a raw crew such as we had no other sail could have possibly been so easily handled on all these

SHIP'S LIFEBOAT, CHINA LUGS, REEFED

occasions as the China lugsail, and for those seas there is nothing, in my opinion, to equal it.

Another experience when on a pleasure cruise in

LORCHA, SOUTH-WEST MONSOON

a 40-ton lorcha on the eastern side of the Gulf was equally favourable to the China lug. It was also during the south-west monsoon from which we had

sought shelter for the night among the islands inside Cape Liant. As the weather did not moderate, and a heavy sea and strong wind continued next

CROSSING THE BAR, ME NAM

morning to drive in on the coast, it came to beating out off the lee shore through a very threatening line of breakers which thundered along the edge of the

CARGO-BOATS, ME NAM

four-fathom line. The crew consisted of two Malays and my faithful Siamese 'boys.' We hoisted every inch of sail that we dared show, as it was a case of pressing her, and a single miss stays was going to be

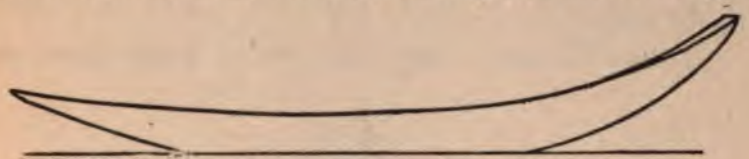
a serious thing. But nothing could have been more manful than the way that little ship swung up to the breakers, the mizen well in bringing her head to wind, and the foresail paying her head off on the fresh tack. Once she gathered rapid sternway, helped by the steep breaking sea, which was roaring over black rocks not fifty fathoms to leeward. Every one stood silent on deck at his station, watching. Only an exclamation from Yen, the coxswain, as a sea toppled

LORCHA, ON A LEE SHORE

over forward and carried him off his feet, caused a general laugh for a single moment. It was the last ledge we had to clear. We slowly gathered way and were soon in the long regular sea outside, then lowering another batten in the mainsail, we could breathe again. The customary chatter of the Siamese was speedily renewed with not a few jests at the expense of the mermaids known to inhabit the locality, and speculation as to their feelings at seeing us fetch out in safety.

It is impossible to leave the craft of the Gulf of Siam without a word about the hardy, cheery fellows

who build and man them. Whether it was the gentlemanly, pure-blooded Siamese crew of a *Rua Pet*, or the big, rough Luk chins or Chinamen sailing the *Rua Chaloms*, they were the same; in all weathers and under all conditions cheerful, willing, and astonishingly



ANCIENT BOAT, LIKE SIAMESE SAMPAN (GIZEH MUSEUM)

friendly. In their language, their ways, and the nameless something which is bred in seamen, they are quite distinct from the shore-going population; and their smartness and pluck in handling their little vessels makes them a seafaring class of which any coast might be proud. They eat little, and know few

BANGKOK SAMPAN

luxuries; clad often in nothing but a pair of short, loose, white and blue trousers coming halfway down the thigh, they face rain and sun, cold and tropic calm. Their hard brown skins glisten like oilskin coats, and seem as hard and impervious to weather. Finer built men it is impossible to meet, and with a handkerchief

round their thick black hair, and a coloured scarf thrown across their great brown shoulders, they make fine figures of men. And beneath a weather-beaten, and even an uncouth, exterior there lies an honest, gentle heart that finds expression in a quiet voice and ready smile.

I had a fairly long and varied experience, and

GOING NORTH, LIGHT

have lived at close quarters with these men within the narrow confines of a 35-footer, and at the end can only say that they have a large share of that direct simplicity of mind and heart which is in the gift of the sea. Remarkable as is the seafaring nature for kindliness of heart and contentment of mind, these characteristics are nowhere more pronounced than in the sea-going classes of the Gulf.

Religion and climate, and temperament resulting from these, have gone far to make the Burmese and Shân, the Siamese and Malay, the excellent comrades that they are to any man whom fortune may lead into their jungle tracks. But if the thoughts of the jungle man are worth exploring, and the sights

ME NAM RICE-BOAT, COMING SOUTH

of his surroundings are worth seeing, those of his brother sailing the monsoon-whipped seas of the tropics have always seemed more so. For into his life has entered not only the voice of the jungle, which admits all the sons of Nature to secrets that lighted cities cannot do, but to him has called that deep song of the sea which adds a peculiar temper to the most unpromising material, and turns the true stuff into

glowing metal. With a certain wistfulness which is alike in young children and in sailormen, there is especially among these people a patient contentedness of mind which, if it will never go far to build up a rigorous people in the Western sense, yet holds a very real charm, and has surely a merit of its own in contrast to the feverish unrest of much of Western

ON THE ME NAM

society. If the 'divine discontent' which is the heritage of the British race is one of the sources of its power, there are yet many aspects of it, which are to be met too frequently in society, which certainly appear to hold but little of good for the future of any race, and which cannot but compare curiously with the state of mind which one has left dwelling by those long stretches of palm-fringed shore, with the deep

jungle sounds behind and the blue, wind-flecked waters before—shimmering sleepily in the noonday sun, or roaring with their many voices in the thunderous night-squalls.

I have said nothing about the river craft of Siam, for, like most river boats, they only use the sail as an auxiliary in fair winds. But of their kind they are the handiest, best-finished vessels to be anywhere met

AN UP-COUNTRY FAMILY HOME, SIAM

with for inland navigation. They are almost invariably teak-built, or with teak topsides over a *thingan* keel and bilge-piece. The beautiful teak colour is preserved and heightened by several coats of *chunam* or *dammar* oil. Complete coach-roofing of beautifully worked reed matting keeps off the fierceness of the sun and the torrential rains. The fore-deck is open for the use of the crew when working the sweeps or quants, and on the lofty platform of the high stern the steersman stands, steering with his toe while he

gently helps his boat forward with
the usual grommet on a stout crut

The *Rua Pet* is the usual Sia
larger *Rua Chao* or rice-boat is of

The *Rua Nua*, as its name im
the Lao country northwards, an
The peculiar long-nosed and long

CAMBODIAN LAKE-BOAT

boat of the west or Chiengmai ri
nosed, short-sterned type of larger
the Eastern main river.

Not infrequently in the big ric
is slung on the quarter, as in the
in the ships of the ancients, a p
often used one upon each quarter.[1]

[1] For a further description of these river b
people, the reader may be referred to the author's

A tall bamboo mast setting a high-peaked cotton lugsail laced to a boom at its foot is the usual inland sail, and is fitted alike to the rice-boat of 12 feet beam and the tiny dug-out of the monastery novice scarcely 10 inches in width.

And these craft, of infinite variety of shape and finish, are the homes of a population numbering in all probability several hundred thousand, who spend their lives on board navigating the intricate and beautiful waterways of what to them is more truly than to most the Land of the Free.

CHAPTER XII

CHINA

In no region of Art and Crafts have the Chinese shown greater independence of thought than in ship and boat building. The striking originality which pervades their architecture, their painting, and their life

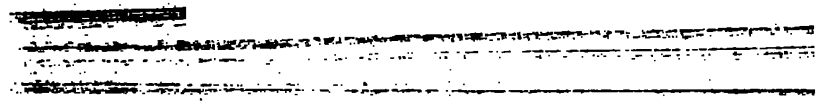
KWANTUNG JUNK

on shore, is even more characteristically displayed by them afloat.

At the hands of Western travellers the Chinese junk has received little but mockery and thinly veiled contempt; the writer treats it with his smartest

SOUTH CHINA JUNK, SINGLE REEFS

To face p. 396.



ridicule, the artist in glaring caricature. Yet, examined fairly, the only excuse for such treatment seems to lie in the wide gulf which separates the thoughts and ideas of the white and the yellow races, and makes it apparently almost impossible for the one to come to any true understanding of the other. As an engine for carrying man and his commerce upon the high and stormy seas, it is doubtful if any class of vessel is more suited or better adapted to its purpose; and it

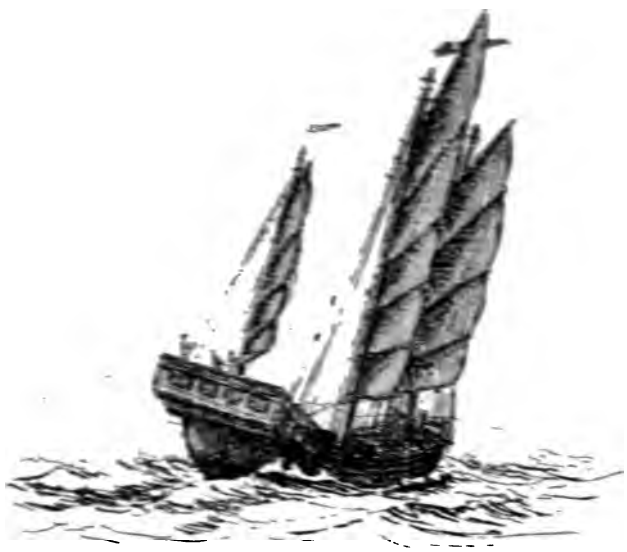
WEST RIVER JUNK (FROM A CHINESE OIL-DRAWING)

is certain that for flatness of sail and for handiness the Chinese rig is unsurpassed. A most capable authority gives it as his unhesitating opinion that the smaller South China junks are 'the handiest vessels in the world.'[1]

Until the *America* visited this country, when modern flat-sail setting first asserted its superiority, the Chinese were undeniably far ahead of all other

[1] Captain C. C. P. FitzGerald, R.N., in *Boat Sailing and Racing*.

masters in their comprehension of the principles of scientific fore-and-aft sailing. The centre-board and leeboard have been used in China, whether in the big Hainan 'junk' or in the humble 'sampan,' from times antedating the visits of the old Norse 'keeles' to these islands. When our forefathers paddled alongshore in open boats, the Chinaman sailed to East Africa in



HONG KONG JUNK

five-masters. We have seen the nineteenth-century yachtsmen develop the overhang, which has culminated in a *Columbia*: the Chinese have built fishing-boats on this principle for a thousand years. In windlasses and labour-saving appliances the Chinese appear to have been always far ahead of the standard reached by European nations until the last century.

Yet, curiously enough, while we have worked out a whole history of naval architecture, ranging from

the coracle to the *Celtic* and the *Shamrock*, the hardy Chinese sailors, true to the conservatism of their race, have continued to weather the typhoons of the stormiest of Eastern seas in craft which, while they yield nothing in the matter of handiness or weatherly qualities to the finest modern sailing-craft developed by Western

AT WUSUNG

nations, have in all probability scarcely altered in a single detail during that period, or been improved by a single knot of speed.

In things nautical the Chinese are the Dutchmen of the East. Both peoples have a curious and distinctive love of bluff lines, of bright varnish, of deck-houses, and of pole-masts with long vanes above the truck. Both have an enormous percentage of their

populations directly interested in water transport are trained to the handling of sailing-craft. Both know better than their neighbours the value of leeboards. If we were to continue the parallel, we might say that both races wear wide trousers, are expert gardeners, and are possessed of the most unlimited supplies of perseverance and industry known in their respective

AFTER A TYPHOON, OFF SWATAU

continents. However fanciful the parallel may be, the yachting visitor in Holland who has had experience of the playfulness of his Chinese brother, may be most forcibly, if not pleasantly, reminded of old times in the East by the mud and stone-throwing propensities of the young Hollander sportsmen among the genial waterside population, this form of greeting being, as far as my experience goes, strictly limited to Holland and China.

It would require years of careful observation and study to give anything like a complete account of the infinite varieties of craft which are used by the Chinese to meet the varying requirements of the vast floating population dwelling along their widespread coasts and enormous inland waterways. A few remarks may, however, suffice to show that the Chinese junk, instead of being, as seems to be commonly supposed, the most

LEEBOARD BOAT, YANGTZE—REEFED

lubberly and cumbersome of craft, is in reality, like the line-of-battle ship of Nelson's later years, as perfect in its own way as it can well be.

The observer must not be carried away by the peculiarities of the superstructures usual in all the larger junks. They are embellishments which add very greatly to the comfort of life on board, but in no way affect the under-water lines of the ship. A little observation will show that the under-water body of the junk, especially in the south, is generally very 'swe ' and by no means far removed from that of a cc

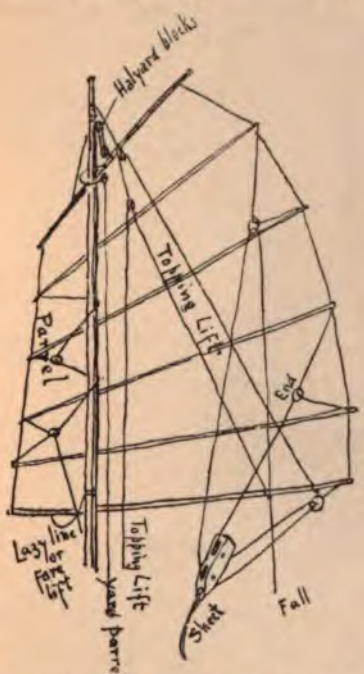
of eighty years ago. The frequent absence of keel in the junk is, however, against good work to windward. The deep rudder, which at sea is lowered down the trunk by windlasses, and extends well beneath the ship, and the forefoot or 'gripe,' which is often extended under the bows, help considerably to hold the vessel up to windward. A few hours spent watching the daily crowd of junks beating through the Lymun Pass out of Hong Kong harbour during the north-east

IN THE LYMUN PASS

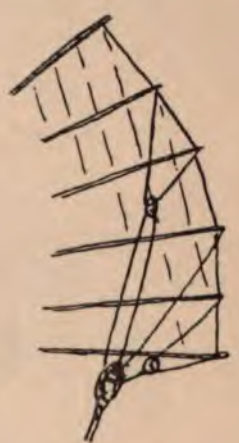
monsoon, will persuade the greatest unbeliever that for speed and set of her sails the junk is not easily beaten; and a finer sea picture not the Thames in Sea Reach can show.

The Chinese sail is a balance-lug extended and stiffened by battens, generally of bamboo, with a more or less rounded leech. It is hoisted on a pole-mast, often a very fine spar, the halyard passing through a large double block on the yard, and a treble block at the masthead. There is a hauling parrel to the yard, which keeps it to the mast, and helps to peak the sail

when reefed. Each batten has its own parrel round the mast, and its own single part leading to the main sheet. There are various ways of leading these sheets, one or two of which are here illustrated, and they constitute the secret of the flatness of set of the China sail. Double topping-lifts on both sides of the sail form



CHINA LUGSAIL, WITH SHEET, TOPPING-LIFTS, AND PARRELS



SKIFF'S CHINA SAILSHEETS

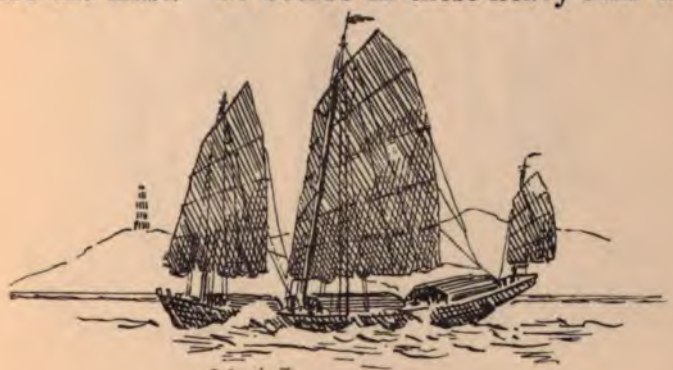
lazy lines, into which the sail falls on being lowered for stowing or for reefing. Reefing is thus simplicity itself; the halyard is let go, and the weight of the sail and battens brings the sail down into the topping-lifts; two or more battens are thus bunched together along the boom, and nothing further is necessary but to gather in the sheets. There is a gathering line from

the masthead to the boom abreast the mast. The luff of the sail is cut in various ways. In the big single-masted boats of the inland waterways of the south and the neighbourhood of Canton, the luff is cut so as to stand out a long way before the mast as in the case of our Western dipping lugsail, thus making a true

WINTER QUARTERS

'balance'-lug, and bringing the centre of effort farther forward. The moment the Chinaman goes to sea, however, in common with all other blue-water sailors, he appreciates the advantage of splitting up his sail area into component parts which are more easily handled, and are more convenient for bringing a vessel into stays and paying her off in tacking. The mainsail is

reduced, and then instead of the modern bowsprit and jib-headed staysails of the West, he plants a foremast right up in the eyes, with in most cases a considerable rake forward, reminding one of the old Mediterranean 'trinchetto,'[1] and sets a large foresail upon it in the shape of another lug. The mainsail in this case is cut with its luff straight up and down the mast, while the foresail is generally so cut that quite a third of its area, and even more than a third of its length of boom, is before the mast. Of course in these heavy sails there



WEST RIVER PASSENGER JUNK

is a tendency for the whole sail to swing out forward, and a single tack-rope, which is sufficient to hold aft the small balance lugsail of an up-river skiff, could never stand the strain which would be put upon it by the lurching of these enormous weights in a head-sea. Consequently the fore end of each batten on the sail is brought aft to the mast by a lacing which can be hauled upon or slacked up, as may be required, from

[1] The ἀρτέμων of the log of St. Paul's shipwreck, and the *artemon* of the elder Seneca and others, which from coins of the second, third, and fourth centuries appears to have been raked over the bows, and to have been generally adopted for running, wearing, and increa ndi-ness of the old one-masted ships.

Instead of having to hoist the heavy mainsail in manœuvring in harbour, the mizen can then be used in combination with the foresail; by taking in the mizen in a breeze the equivalent of one or two reefs in the mainsail is easily attained without the necessity of handling the heavier sail at all; while, when there

FIVE-MASTER, WUSUNG BAR

is a danger of missing stays, the mizen is often invaluable.

In the large five-masted junks of the north, which were more common formerly than they are now, two mizenmasts may generally be seen, one stepped broad out on each quarter on the high poop. The weather of these is set, and the advantage of its position is that it is never becalmed by the mainsail, and always gets a true wind. These junks were built very long, and were by no means too handy in stays. Consequently these two mizens, though perhaps un-

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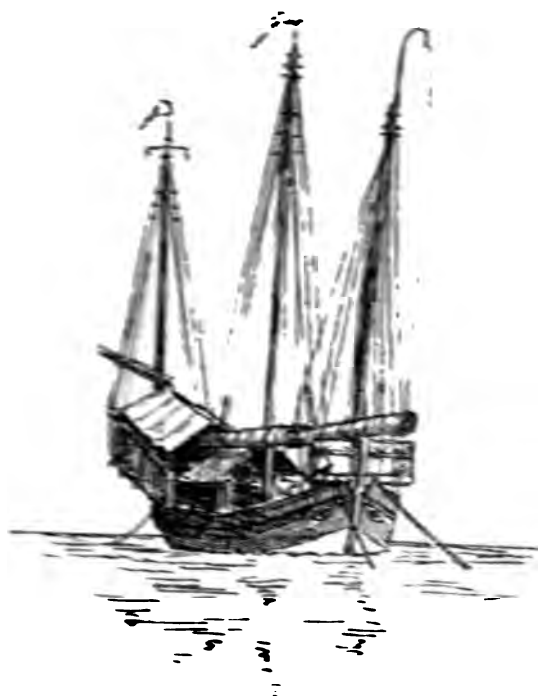

WINTER QUARTERS

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the deck; and by this means the lower battens can be bowsed aft, and the required peak given to the sail, while the friction and strain are distributed over the whole mast. It takes not a little skill to set up a Chinese lug properly; and in a head-sea, or in hoisting sail after rain, the groaning and creaking which goes on up and down the mast is prodigious. But the moment the halyard is slacked up, everything else slackens off automatically, and the sail is almost safe never to jam, and to come down as freely in a squall

SHIP'S 28-FOOT CUTTER, CHINA LUGS

as in a flat calm. I can speak from some experience in handling this form of sail, and may say that once having learned the set and balance of the sails for various points of sailing, nothing can surpass the handiness of the rig, but every sail requires a little knowing if the best results are to be obtained from it.

The mizen, right up on the high poop, and frequently a trifle over to the starboard quarter, is generally adopted by the larger sea-going junks, for the very same reason that it is used very generally in Europe, namely, to reduce the size and increase the handiness of the mainsail necessary for the ship.

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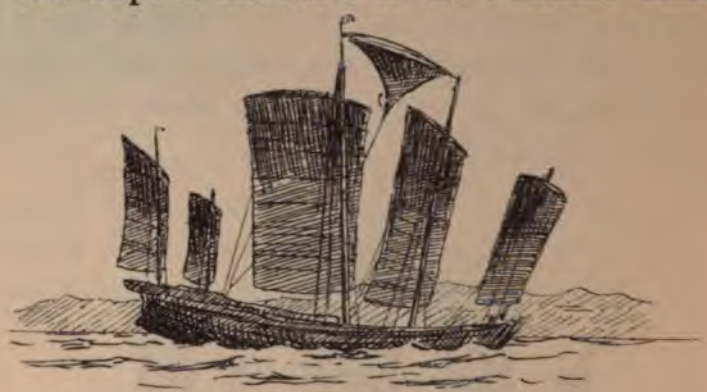
sightly to the Western eye, were invaluable as steering sails pure and simple.

The shape of sail north of the Formosa Channel



FIVE-MASTER, WUSUNG BAR

will be seen to be very lofty and narrow. In vessels of great length this shape of sail rendered necessary the

HAINAN TRAWLERS

additional or second foremast between the mainmast and the true foremast.

The big northern craft which crowd the Wusung river are clumsier to the eye than the smaller southern

vessels; but some of the small fishing-craft to be seen off Amoy are beautiful things, and show that even the great length of overhang which has been evolved by modern scientific yacht construction is another of those points which the Chinese sailor has long understood a good deal about.

While the northern sails are generally lofty and narrow, with square heads and comparatively straight

OFF AMOY

leeches, it is in the South China Sea that the perfection of shape is seen. Here the sail is well peaked, and the yard has a handsome round in it. In place of a multitude of small, somewhat untidy-looking battens, only five, or sometimes four, are used; and a fine rounded shoulder is given to the after-leech. The result is a sail which only the racing cutter's mainsail can excel on a wind, while for handiness in reefing the latter cannot compare with it.

It is interesting to note that among the big trawlers which may be met with generally in pairs off the

Hainan and Kwantung coasts, the staysail is used a good deal when on a long board with the trawl down. Besides a main staysail between the main and fore-masts, a flying main topmast staysail is set aloft.

The lofty poop of a Chinese junk makes one think that the Chinaman has again anticipated us, and that the modern model dwelling or hotel is merely a latter-day imitation of a system of overcrowding which has

OFF AMOY

been generally practised by the Chinaman for a trifle of some thousands of years. Whole families live in it, like rabbits in a hillside, burrowing in and out of its lofty sides, living, playing, eating, sleeping (and, of course, gambling) in its nooks on deck, or in its depths below, for months and years, at sea, in port, in typhoon and calm.

The bow of the junk is not its least characteristic feature. Over a staging standing on a big transverse beam fitted to the stem-head, and projecting over each bow so as to answer the purpose of a cat-head, are fitted

the anchor windlasses, and here may be seen the great single fluke wooden anchors with shanks twelve or more feet in length, and weighted often with huge stones, which are a relic of very ancient times.[1]

A peculiar wing is often fitted to the windlass staging upon which the eye of the ship is painted. The

CALM

eye is never omitted by the Chinese any more than by the Maltese or the old classical sailors, for, as John Chinaman most logically says, 'If no have got eye, how can see?' These wings or 'cheeks' are often gaily painted, μιλτοπάρῃοι, as in ancient days.

On his decks in the waist of the ship the thoroughness of the Chinese sailor may be studied, for every kind of conceivable sea-store is there stowed; not

[1] Cf. ἑτερόστομος in the *Iliad*.

[illegible] and [illegible] only. [illegible] when wanted and [illegible] if it be possible where men have to fight such a [illegible] as the China Sea, on the side of size and strength. Huge windlasses stand under the masts in use like the [illegible] of the ancients

JUNK IN WINTER QUARTERS

on the halyards; and big capstans, the ancient περιαγωγεῖς, are used for the heavy grass warps.[1]

[1] From the derivation of the word, and the context in which it occurs in Lucian, the translation 'capstan' here adopted appears to be in every way a more suitable rendering than that given by Mr. Smith in his *Voyage and Shipwreck of St. Paul*. It is suggested by him there that these 'drive-abouts' were oars or paddles placed forward for helping the ship round when slack in stays. There is no evidence, I think, that any seamen have ever used means of this nature in the forepart of the ship for this purpose, and indeed they would be inefficient and unnecessary substitutes for the oars with which even the Roman merchant ships, which depended principally on sail power, were equipped upon each side, which could always keep steerage-way on the vessel and, if necessary, back upon one side and pull on the other and thus get her round at any moment. Moreover, the old form of paddle-rudders (πηδάλια) can be used with great power in bringing a sluggish vessel round, and would render a resort to such a device comparatively rare. On the

They have wandered far, these Chinese sailors:[1] to the east coasts of Africa, or to the Malay Archipelago; one meets them in the Bay of Bengal, or the Gulf of Siam; away off Manilla; anywhere between 10° south latitude and 40° north latitude upon the eastern coasts of Asia.

And wherever they go they leave some impress of their methods on the maritime peoples whom they visit, so that even the Malay, sailor as he is, distinctive as he is, has, as remarked elsewhere, largely adopted

UP THE YANGTZE

the Chinese lugsail. For ships' boats the sail has long been in use among knowing skippers in the East, and a ship's lifeboat, rigged with two of these sails, is one of the handiest forms of ship's sailing-boat to be met with anywhere.

Among the various productions of the Chinese

other hand, the handspike and capstan appear to have been known to the ancients both in the East and in the West, and the handling of the heavy ground-tackle was one of the first problems which had to be solved by the early seamen when the size of sea-going vessels was increased.

[1] A very perfect representation of a three-masted North China junk is preserved in a fresco in one of the caves at Ajunta, in India. It is figured in Torr's *Ancient Ships*, and must be of considerable antiquity.

boat-builder may be mentioned the stern-wheel passenger boats of the Canton and West River districts. The light-draught river steamboats of Yarrow & Thorneycroft have made the stern-wheel method of propulsion familiar to us in the West, but in the East with coolie labour in place of the steam-engine, the stern-wheeler is as old as the Chinese nation itself.

HONG KONG CARGO-BOAT

The coolies are under the shelter of the high poop aft and the rest of the vessel is generally crowded with passengers journeying up and down the river. A large single lug with a long fore-leech or luff is used when there is wind.

The Hong Kong cargo-boat is probably, as regards tonnage, construction, speed, and handiness, one of the finest sailing lighters in the world. The single, enormous batten lugsail of brown matting is one of the

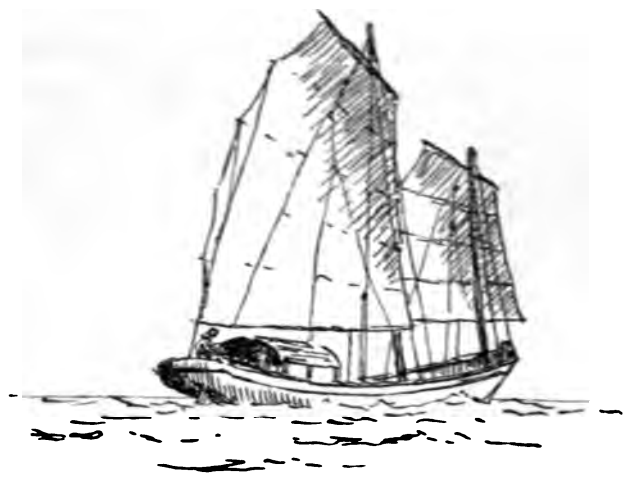
most picturesque features of that or any harbour. Occasionally a mizen is carried for convenience in laying. But the smoothness and precision with which this huge sail is worked and the vessel is manœuvred among the crowd of shipping is most remarkable. To this not only the large deep rudder, but a couple of vast 'sculling' oars, one upon each quarter, contribute. This form of propulsion is the usual one for big heavy craft in China. The long oar, usually in two pieces, is pivoted on the quarter or stern, the fore end being held in place by a strong lanyard to the deck. Any number of the crew can work on each oar, giving to it the motion known to seamen as 'sculling.' A vessel of several hundred tons can be propelled in this way at from three to four knots. Its great advantage is that it is perfectly quiet, not exhausting, and the oar being in line with the boat, it is peculiarly applicable to crowded anchorages or narrow waterways. The motion is really that of the gondolier when his blade is brought aft to clear an obstruction.

A lofty triangle, in place of the ordinary pole-mast, is used for hoisting a single great sail in many of the craft working the rapids of the interior, in the Red River and elsewhere in the south, as was done by the Egyptian river boatmen in the time of the third and fourth dynasties eight thousand years ago,[1] and is still done in the Burmese rice-boats mentioned in Chapter IX.

But, as a rule, the inland and estuary craft follow the general lines already indicated. The general flat character of the land about the deltas of the great

[1] Figured in Holmes's *Ancient and Modern Ships*.

rivers of China, and the multiplicity of waterw natural and artificial, favour transport in bulk in ve of considerable tonnage for river craft. Single ma prevail generally for inland navigation proper, and t hulls are always 'bright,' as sailors say—that is, t natural colour of the wood not concealed by paint. It preserved and heightened by the use of *dammar* or oth oil. The appearance of the Chinese boats is th



AT HONG KONG

generally smart and serviceable, and for comfort and convenience in their deck arrangements they cannot be surpassed.

The smaller 'sampans' are innumerable in their varied designs, differing as they do in each locality. In these smaller boats the standing lug of cotton, with a bamboo yard and boom, is often used, the steering being frequently done with the after oar.

Familiar to many Westerners will be the smart little two-masted sampans which ply in Hong Kong harbour for hire. There is a shelter for the passengers

aft. The steersman, woman, or child sits abaft this, and of whatever age or sex generally handles the little craft with the ability which is bred of constant practice

IN SWATAU

and utter fearlessness, whether of drowning or scraping other people's paint.

The Chinese sampan in one form or other is known

UP THE WEST RIVER

to all travellers who have visited Rangun, Penang, or Singapore, Bangkok or Batavia, and is as ubiquitous in Eastern seas as the Chinaman himself. The best-

known type is probably the gaily painted, two-tailed boats at the former ports. With their great beam, flat bottom, and deep rudder, they are good carriers and

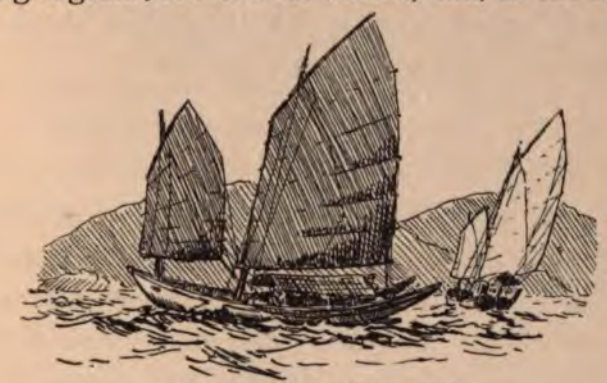
PENANG SAMPAN

rapid sailers, but their best point of sailing is undoubtedly a 'soldier's wind.' The largest class of boat of this build known to me is that used at Junkseylon,

SINGAPORE SAMPAN IN A SQUALL

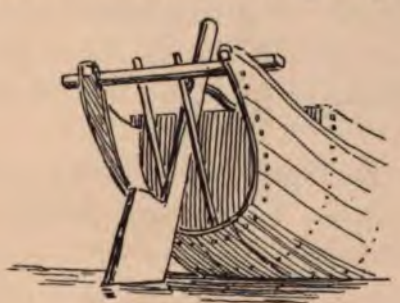
where the immigrant Chinese fishermen work a two-masted boat of about 30 feet in length and 8 feet beam, rigged with battened main and fore lugsails. The masts are very raked, the mainmast aft and the foremast over the bows. They are fast and weatherly, and

very stiff. The large Singapore cargo sampans approach these in size, but being only rigged with calico standing lugsails, are inferior sailers, and, as the rigging



FISHING SAMPANS—JUNKSEYLON

and spars are of the lightest, are unable to do more than run before the Sumatra squalls when they burst upon the harbour. At such times all their spars may be seen bending like trout-rods, and giving as if to a fish



SAMPAN STERN

in every jump of the sea. With centre-boards or lee-boards they would probably carry a lot of sail as the Junkseylon boats do, and would handle well, though their long 'praam' bow would always make them inclined to 'slam' in a head-sea. Any one taking the

trouble to sail one of these boats for himself, a performance which the good-natured Chinese boatmen regard as a very huge joke, will be surprised at the little fuss and great speed with which they push through the water in a smooth sea and nice breeze.

JAPAN

In their use of mast and sail the Japanese present one of their customary surprises. From an island race of such valour, industry, and capacity, boasting a civilisation two thousand years old, whose history is filled with the records of fearless and strenuous enterprise, and which is so advantageously situated as is the Japanese, one would have expected remarkable developments in nautical architecture, and in maritime activity generally.

Yet in actual fact the national high-pooped junk of Japan, the largest sea-going vessel developed in the islands, was always of clumsy construction, and had neither the quality of speed nor that of ability to work to windward.

Although the Japanese have had considerable intercourse with China, Korea, and Formosa at various periods, it would appear that much of this was conducted in Chinese junks, and for the rest they were content to make slow voyages in their own archaic vessels, the form and rig of which have never altered in historic times.

It has been suggested that the deliberate policy of seclusion which was adopted by the rulers of Japan after the advent of the Portuguese at the end of the

sixteenth century, had much to do with the small advance made by Japanese shipbuilders and seamen in the art of building and equipping sea-going vessels.

But it must be remembered that this policy was only adopted at a comparatively recent date in the nation's history, and in no way affected the early maritime enterprise of the people. We have records which show that certainly so late as 1592, when contemplating an invasion of Korea, Hideyoshi entered into negotiations with the Jesuits with a view to obtaining the loan of some of the Portuguese armed vessels of the period, which, small as we know them to have been, were in every way superior to those of the Japanese. Nothing could give more conclusive evidence of the unsuitable character for long sea voyages of the Japanese vessel of the time immediately preceding the period of seclusion.

The junk of to-day remains practically identical with that of the sixteenth century, which in turn had altered nothing from the vessels in vogue ten centuries earlier.

This junk was a clumsy but very strongly constructed vessel of great bulk. It had a heavy raked stem with low fo'c's'le, a high freeboard amidships, and a lofty poop with a heavy rudder which could be hoisted or lowered in a rudder trunk. Probably no vessel ever built was more durable in construction or more ingeniously or better finished as regards every detail. Owing to the great beam and draught, it had large carrying capacity, but the lack of length and sail-power made it slow.

The rig consisted of a single heavy mast setting one lofty but narrow squaresail, not remarkable either

for its set or for its excellence of cut. The chief characteristic of hull, gear, and rigging was excessive strength and cumbersomeness.

With the growth of modern commerce in Japan there has come a great change over the face of the Japanese mercantile marine. Simultaneously with the formation of an efficient fleet of modern warships there has grown up with remarkable rapidity a great fleet of steam merchant ships, many of them of large tonnage and first-class equipment; and in the management and handling of these fleets the Japanese sailors have shown in a remarkable degree that capacity for learning, and for improving on what they learn, which has in other directions been so eminently characteristic of the nation. At the same time, on an indented coast-line like that of Japan, presenting sheltered waters and safe harbours, it is inevitable that the sailing-vessel must be of ever increasing use for the economical transport of certain classes of cargo; and accordingly we find that in the last thirty years the sailing tonnage of Japan has steadily grown, as the water-borne commerce between the different portions of the empire has developed.

It was hardly to be expected that a nation with such keen faculties as the Japanese possess would, under the circumstances prevailing in the Pacific at the end of the nineteenth century, continue to pin their faith to so old and unsuitable a class of vessel as the square-rigged junk of their ancestors. Thus it has come about that the value of the fore-and-aft sail is now fully appreciated in Japan. Not only are large numbers of smart, handy little schooners now used

in the coasting trade, but the assistance of the fore-and-aft sail has been invoked even on board the old-fashioned junks.

Of the crowd of vessels to be seen beating against a foul wind in any channel of the inland sea, the majority will probably be still the old class of junk with the square mainsail assisted by a fore-and-aft mizensail on the poop and a fore staysail, or possibly two, set before the mast. While formerly with main squaresail alone the junk captains never attempted to stay but were always compelled to wear ship, now, with the addition of the mizen to bring the vessel's head up and of the staysail to pay her off, they are able to stay round with comparative facility, the gripe of the stem, the shape of the underwater body, and the deep rudder all being of material assistance.

It is in the schooners, however, that modern Japan shows its fore-and-aft seamanship. These little vessels follow in most particulars the general features of the Pacific schooner, with which Japan has become familiar from the visits of Canadian and Yankee sealers. The two masts and main and fore sails are much of a size; there is a longish jib-boom, and two or three jibs are carried besides the fore staysail. The Japanese, however, have not gone in for topmasts, and pole-masts are the rule; nor is the square topsail often seen. With a pretty fiddle-head cut-water, the bow and waist are kept fairly low, and the greatest freeboard is generally at the quarters and poop, thus retaining in some measure the main ideas of the old junk outline. In handling these vessels they display all the fearlessness and competence which are associated

APPENDIX

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GLOSSARY

This Glossary is not intended to be in any sense exhaustive, but merely to give the sea terms used in the foregoing pages, with the particular meanings attached to them in the text. Sea terms have altered greatly with the passing of the old wooden square-rigged ships, and the great development in small fore-and-aft rigged fleets, due to the expansion of deep-sea fisheries and coast trading during the last century, has resulted in the modification of many old sea terms, and the substitution and creation of not a few new ones which were unknown to our grandfathers.

A

abaft: behind, inferred relatively from the stem, and continuing towards the stern or hinder part of the vessel.

about: circularly; the situation of a vessel after she has gone round and trimmed sails on the opposite tack.

aft: an abbreviation for abaft; the hinder part of a vessel.

amidships: in the middle of the vessel.

athwart: across.

B

baggara: a lateen-rigged Arab trading vessel used in the Red Sea.

balance lug: a lugsail with a boom, to which it is laced, at its foot. From one-sixth to one-third of the sail area is usually before the mast, and helps to balance the remaining portion abaft the mast. The tack is fixed to the boom abreast the mast, and perpendicularly under the halyard.

baldie: a small class of Scotch lugger used on the east coast.

barge: a cargo vessel with flat bottom and straight sides for navigation in shallow waters, the mast being usually stepped in a tabernacle for lowering when passing bridges, etc. Leeboards are generally used to increase the draught of water when sailing.

barquantine: the diminutive of barque. A vessel carrying a barque's full square-rigged foremast, but fore-and-aft rigged on main and mizen masts.

batten: a scantling of wood, or small spar, sewn into and extending across a sail so as to extend the leech; generally a scantling of wood tacked to a spar to strengthen it.

bawley boat: a cutter-rigged Thames Estuary fishing-boat, without main boom.

beam: the breadth of a vessel taken at the widest point, the centre of the vessel's side.

eat: pieces of wood, with generally two thumbs or arms, used for fastening ropes upon.

.ench- } **build**: the method of boat-building by which each plank is laid
linker- } on so as to overlap the one below it, so that they present a series of ridges running longitudinally.

lose-hauled: when all the sheets of the sails are hauled in close in order that the vessel may sail as near as possible against the direction of the wind.

oaming: a raised piece of wood-work running round the cock-pit, or any opening in the deck, to keep water from getting below.

:oble: a type of lug-rigged fishing-boat on the north-east coast, with high bow, deep forefoot, low, shallow stern, and deep rudder.

:ock-pit: the opening in the deck of small-decked sailing-craft in which the steersman or crew can sit without the liability of falling overboard, which sitting on the deck would entail.

counter: a method of building out the stern of a vessel above the waterline, and beyond where the rudder-head comes through the deck. It enables the lines of the quarters to be carried out and finished off gradually into a round, overhanging, and graceful end.

course: the lowest square sail on a fully square-rigged mast.

crutch: a forked or twisted upright stanchion fixed in the side of a boat to support an oar or spar.

cutter: a fore-and-aft rig consisting of gaff and boom mainsail, fore staysail, and jib, with a gaff topsail and jib topsail, according to weather, set upon the topmast.

In the navy a cutter is a form of ship's-boat for rowing or sailing, rigged with lugsails strongly built, and capable of carrying heavy weights of men or stores.

D

dahabia: a lateen-rigged, long-hulled houseboat used on the Nile.

dandy: a cutter or sloop-rigged vessel with a jigger or mizen-mast abaft. This mast in a true dandy would be fitted with a lugsail, but a gaff and boom mizen is now often used.

davit: a piece of timber or iron, with sheaves or blocks at its end, projecting over a vessel's side, to hoist up and suspend one end of a boat to.

dhow: the generic term applied to all the Arabic lateen-rigged, grab-built vessels of the Indian Ocean.

dinghy: a small boat attached to vessels for the use of the crew for going ashore, etc. Generally owing to their small length they are very broad in proportion to length to ensure stability. Also a passenger boat on the Hugli.

dip: to lower, generally with the intention of hoisting again.

draught: the depth of water required by a vessel to float her.

drift-net: a long net, the top floated by corks, and the lower edge sunk by lead sinkers, by which mackerel, herring, and pilchard are caught. A number of nets, to the extent of a mile or more, are used by each boat,

and are left suspended vertically in the water for some hours after sunset, when they are usually 'shot' or set in the water in the neighbourhood where fish are thought to be schooling, the boat riding to a warp at the leeward end of the line until the nets are hauled again.

driver: a fishing-boat engaged in the drift-net fishery. Also the term applied to the mizen fore-and-aft sail in a square-rigged ship.

drogue, or sea anchor: an arrangement for preventing drift and keeping a vessel's head to sea in bad weather. A drogue can be made by some canvas and a few spars, but most fishermen now carry a ready-made canvas bag spread at its mouth by a bamboo or iron ring, and fastened to a bridle. This can at any time be bent on to a warp and used either for heaving-to in bad weather, or for checking the boat's way when running into a crowded harbour.

E

earing: an eye spliced into the bolt-rope of a sail, usually for reefing purposes.

F

felucca: a single-decked, lateen-rigged vessel of the Mediterranean.

fifie: a Scotch lug-rigged fishing-vessel with straight stem and stern posts.

flare: a flanching or leaning outwards of the side of a vessel, usually at the bows, above the waterline, for throwing off head-seas; in contradistinction to a tumble-home or wall-side.

fluke: the triangular palm inside the point of the arm of the anchor, which on entering the ground holds the ship.

flying sail: a light sail set aloft for light weather, which is not furled or stowed aloft.

fo'c's'le: for forecastle, a short upper deck forward, above the main deck; in small vessels the quarters for the crew down forward; sometimes also fore-peak.

foot: the lower edge of a sail.

fore-and-aft: in the fore-and-aft line of a vessel from stem to stern. Usually applied to sails which are normally set in this line as opposed to square sails, *e.g.* gaff and boom sails, lugsails, staysails, and jibs.

forefoot, also gripe: the foremost piece of the keel, connected with it by a scarf, the upper end curving into the lower portion of the stem-piece.

foresail: in square-rigged vessels the lowest squaresail on the foremast; in lug-rigged vessels the principal sail on the foremast; in a cutter, ketch, or dandy, the name is given to the staysail, which is of second importance to the mainsail, and is set on the forestay to the stem-head.

freeboard: the side of the vessel from the waterline to the gunwale.

furl: to roll up and bind a sail upon its stay, yard, or mast, as the case may be.

G

gaff: the spar used to extend the head of a fore-and-aft sail which is not set on a stay.

gaiassa: a lateen-rigged cargo-carrying boat of the Nile.

galley: a flat-built, one-decked vessel of the Mediterranean, propelled by oars or sails; a term also used by British seamen for a long clinker-built boat which can sail or row.

galliot: a type of Dutch ketch-rigged trading vessel.

gharawa: small Zanzibar outrigged boat.

gig: a light form of galley-built boat to row or sail.

gripe: *see* forefoot. Often a projecting piece added to the forefoot for the express purpose of making a vessel hold a better wind by creating more lateral resistance at the fore part.

grommet: a ring of rope, usually placed round a mast or spar, and seized or tied with small yarn to fit a spar which is supported by its means. In this sense more correctly a becket.

gudgeon: a metal brace with an eye bolted upon the stern-post for the pintle of the rudder to work in as upon a hinge.

gunwale: the horizontal plank fitted along, and covering or binding the heads of the timbers, and so forming the top of the boat's side.

gybe: the act of swinging a fore-and-aft sail from one side to the other by permitting the wind to come on what was the lee quarter, and so hit the sail on that side, and throw over on to the opposite side of the vessel. It may be caused by a change of course due to putting the helm up, or by a change of wind, and owing to the violence with which the sail often comes over, there is a risk of carrying something away.

H

half-deck: a deck which only covers in a portion of a boat, usually extending from the stem to the mast, and as a water-way along the sides.

halyard: a rope or tackle used for hoisting up sail.

hatch-boat: a half-decked boat with hatches for covering in all or portion of the open part, formerly much used in the lower Thames.

head: the upper edge of any sail; the fore part of a vessel.

heel, to: to list or lie over or incline at an angle from the perpendicular, as when a vessel lies over to the wind.

heel, the: the lower or butt end of a spar; the after end of a vessel's keel where the stern post meets it—generally the place of greatest draught.

hoggie or **hog-boat**: an old fore-and-aft rigged clinker fishing-boat of great beam used at Brighton in the last century. Probably connected with heck-boat, an old term for a pink, but also used for a clinker-built boat with covered foresheets. Probably of Dutch origin.

horse: a wooden or iron bar which spans the vessel from side to side close to the deck. The sheet of a sail comes to a thimble which runs on the horse, the sheet thus being able to traverse from side to side according to the tack.

hoveller, or **hobeller**: a Cinque-Port term for pilots and their boatmen; still used at Deal, and applied to luggers on the look-out for jobs among shipping. In Cornwall, applied to boatmen who ply for hire and are not true fishermen. The *Sailor's Word-Book* says, applied colloquially to sturdy vagrants who infest the sea-coast in bad weather in expectation of wreck or plunder.

hvalor-baad: a Norwegian fore-and-aft rigged boat, stem and stern alike, but with little sheer and great beam, used on the south coasts.

J

jib: a triangular sail set forward on a bowsprit. It may run on a stay or be set up taut by the halyards, the strain being taken by its own strong luff-rope.

jib-boom: a spar forming a continuation of the bowsprit forward to extend the jibs. It is fitted to the bowsprit by a cap and saddle, much as a top mast is set on a lower mast, and like it can be reefed in or it can be topped up out of the way in harbour.

junk: the generic name applied to all the decked sea-going vessels of native construction, with high poop and overhanging bow, used by the Chinese, as well as to the old-fashioned craft of the Japanese.

K

keel: the lowest and principal timber of a vessel running fore-and-aft its whole length, and supporting the frame or ribs like the backbone in quadrupeds. It is usually first laid on the blocks in building, forming the base of the superstructure.

Also applied to vessels on the north-east coast used for cargo-carrying. An old British name for the long vessels used by the Danes and Saxons, from *ceol* and *cyulis*—usually written *keele* and sometimes *keyle*. Iceld. *kjoll*, barge or ship. Dan. and Swed. *kiel*, vessel. Swiss *ceol*, barge or small vessel.

ketch: a vessel of the galliot order equipped with main and mizen masts, and usually fore-and-aft rigged, although formerly often square-rigged. The Spanish *quéche*, the Portuguese *queche*, and the old French *quaiche*.

knee: an angle of strong wood or iron for giving strength in construction, *e.g.* securing deck beams, thwarts, etc., to the sides.

L

lacing: rope used to lace a sail through eyes in the bolt-rope to a mast or spar.

lateen: a long triangular sail bent by its fore leech to a long yard which hoists obliquely to the mast, much used in the Mediterranean and by the Arabs; the latter, however, generally cut the sail so that a short luff stands below the heel of the yard.

lead: an instrument for discovering the depth of water, consisting of a tapered cylinder of lead attached by means of a strop to a long line.

lee: the opposite side to that on which the wind is blowing; the direction toward which it is blowing.

leeboard: wooden or iron wings fixed by a stout bolt at the fore-end to the side of flat-bottomed vessels. When the after-end is lowered the leeboard stands up and down in the water, making the draught greater, and by its flat side tending to decrease leeway or drift to leeward.

leech: the borders or edges of a sail which are more or less perpendicular.

The fore-leech is generally called the luff, and consequently in fore-and-aft vessels the leech is nearly always the after-edge running from the peak earing to the clew.

leeward, or leward: on the lee side.

leeway: the drift which a sailing-vessel makes to leeward.

leg-of-mutton: a three-cornered fore-and-aft sail with its luff laced to a mast; very handy and safe, particularly for a mizen.

list: to lie over or incline at an angle from the perpendicular.

lodsbaad: Norwegian pilot-boat.

long-lines: used in deep-sea line fishing for such fish as cod, halibut, etc.

luff: the fore leech or edge of a sail.

luff, to: to bring a vessel's head nearer the wind.

lugger: a vessel rigged with lugsails.

lugsail: a powerful form of fore-and-aft sail hoisted on a yard which is slung from one-quarter to one-third of its length forward of the mast. The end of the halyard is usually fastened to an iron hoop or traveller which keeps the yard to the mast. The sail is set taut up on its luff-rope, which is swayed up so as to stand rigid. It is much used by fishermen as being simple and involving but little rigging.

dipping lug: in the case where the tack of the sail is made fast at some distance in front of the mast, the sail has always to be hoisted on the lee side of the mast to get the best results from it, and consequently it must be dipped on each fresh tack and hoisted on the new lee side.

standing lug: when the tack is fastened at the mast it is not necessary to dip, but the sail can be left standing as the mast does not interfere with its set.

balance lug: a lugsail laced to a boom at its foot, has its tack at the mast, and also requires no dipping.

lumber iron: a forked crutch or stanchion fixed upright in the gunwale to hold oars, spars, or sails when not in use.

M

mainsail: the principal sail on the mainmast.

malar panshi: a country boat of the Indian rivers.

masthead: the portion of the mast above where the shrouds or main rigging are secured to the truck or cap.

mizen: the aftermost mast of a vessel of two or more masts, generally the smallest; often called jigger by fishermen.

mizen sail: the sail set upon the mizen mast.

N

nabby: a Scotch lug-rigged boat with very raking mast and a jib, used on the west coast.

nagar: a cargo-boat used on the upper Nile.

nordlandsbaad: a Norwegian north-country boat, stem and stern alike, with high ends and low waist, and a single squaresail.

O

outhaul: the rope used to haul out a sail along a spar on which it is set.

outrigger: a boom or spar rigged out over the side to extend a sail; a counterpoising log of wood rigged out by cross-pieces from a canoe or boat and floating on the water to prevent capsizing.

P

paranzello: a small lateen-rigged yawl of the Mediterranean.

parrel: a band of rope for keeping the yard into the mast, often fitted with a number of bull's-eye trucks of wood to prevent friction in hoisting. Wooden ribs were fitted between the bull's-eye trucks in square-rigged ships for facility of travelling.

pattamar: a lateen-rigged dhow type of cargo-vessel used by the Mohammedan seamen on the Bombay coast.

peak: the upper outer corner of a gaff-sail or lug; the upper outer end of a gaff or yard.

peter boat: an open fishing-boat of Norse origin long used in the Thames. They were clinker built and stem and stern alike, as were the old Norway yawls, and had a fish-well amidships, generally spritsail rigged.

pintle: metal hooks bolted into the rudder which fit into the gudgeons fixed in the stern-post.

pole-mast: single spar mast, without topmast.

poop: from the Latin *puppis*; the aftermost portion of the hull, often raised above the general line of the gunwale.

pooped, to be: the breaking of a heavy sea over the stern or quarter of a vessel when running in heavy weather.

port: the left side looking forward.

prahu: a Malay term for boat.

pulwar: a country boat of the Indian rivers.

punt: an Anglo-Saxon term for a flat-bottomed boat; generally used at sea for a broad, beamy boat of small size, such as a dinghy. Also a large class of deep-ballasted half-decked boat at Falmouth.

purchase: a mechanical contrivance which increases the force applied. At sea generally a combination of pulleys for moving and hoisting heavy weights such as spars, sails, etc.

Q

quarter: the portion of the vessel's side between the stern and the beam, abaft the middle section.

R

rake: a fore-and-aft inclination or deviation of mast or spars, or stem or stern post, from the vertical.

redningskoïte: a Norwegian sea-keeping lifeboat for assisting the North-land fishing fleets in bad weather.

reef, to: to tie up a portion of a sail in a hard wind so as to reduce its area, by means of reef-points, reef-earing, reef-cringle, etc. Also to shorten in a topmast or bowsprit.

reeve, to: to pass a rope through an aperture such as the channel of a block or sheave for hauling upon.

rib: the timbers which rise from the keel of a vessel to the top of its side upon which the skin planking is fastened.

rig: the method in which masts, sails, and ropes are fitted to a vessel.

rigging: a general name given to all ropes and chains employed to support the masts and trim and set the sails. Standing rigging consists of those ropes which are seldom handled, such as stays and shrouds which support masts; running rigging, of those which are constantly handled in making, shortening, or trimming sails.

rua: the Siamese word for boat: the prefix for all boat names.

ruffles: a hole cut in the keel of boats which have to be hauled up a beach on landing. A chain is rove through and taken to a capstan. Hauling on this pivot tends to lift the boat over the sand and gravel.

run: the curvature of the lines of a vessel's hull towards the after part.

runner: the tackle used in tautening up the backstay; hence the backstay itself in small craft.

running: applied to a bowsprit, or other spar, which can be run in and out, and can so be reefed, having in the case of a bowsprit fid-holes in it for the purpose. Applied to rigging which is constantly handled in working the vessel. Also a vessel when sailing before the wind.

S

sagg: to give way under pressure, usually of the wind.

sampan: generally applied to all small, open, or half-decked boats of Chinese build.

scandalise: to clew up, of a mainsail when the peak is lowered, and tack hauled up.

schooner: a two-masted fore-and-aft rigged vessel, the foremast being the smaller of the two masts, the principal or mainsail being on the after-mast, which is stepped very near the middle of the vessel.

schuyt: a Dutch one-masted vessel.

sea-anchor: *see* drogue.

seine: a net which is shot by a boat round a school of fish, the ends being brought together and the lower edge of the net pursed up. The circumference of the net is reduced by hauling in the net until the fish are all brought into a bunch and can be bailed out.

settee: long, sharp, single-decked lateen-rigged vessels of the Mediterranean without topmasts.

shank: the bar or shaft of an anchor constituting its main piece. at one end of which is the stock and at the other the arms.

sheave: the wheel on which the rope runs in a block, or in a mast or spar pierced for the purpose.

sheave-hole: the channel pierced in a mast or spar for a rope to be rove through.

sheer: the hang or curve in a vessel's side which generally rises towards the stem and stern.

sheet: the rope fastened to the clew or lower aft corner of a sail by which it is controlled and trimmed to the wind when sailing.

skaffie, or scaith: a type of Scotch lugger with raked stem and stern posts, used principally on the coastline between Fraserburgh and Dornoch, and apparently of Norse origin.

skidds: pieces of wood laid under a vessel's bottom for launching her off from the shore.

skiff: a light open boat, generally for rowing, and built with considerable flare forward.

sliding gunter: a light spar running on gunter-irons up and down a mast on the afterside to increase its height. A high peaked sail can thus be set reaching above the masthead.

sloop: an old term applied to a vessel rigged as a cutter but with a standing bowsprit and one or more jibs set on standing stays. Also when the foresail and jib are in one, and set on a short standing bowsprit.

smack: originally a cutter-rigged vessel of considerable tonnage used for trading or passenger traffic, such as the old Leith smacks. The term has been applied by fishermen to all large fishing-craft, fore-and-aft rigged in contradistinction to lug-rigged, whether cutter or dandy or ketch rigged, as most of the modern trawlers have become.

snaekke: A Norwegian skiff.

spiller: a set line with a large number of baited hooks, much used by coast fishermen.

spinnaker: properly a large triangular sail of very light material for setting from the masthead, goose-winged with the mainsail when going before the wind. By the Thames bargemen applied to the flying jib set on the topmast stay in fine weather.

spreet: a spar used to extend the peak of some fore-and-aft sails. The head fits into the roping at the peak of the sail, and the heel into a snotter or grommet low down on the mast, the spar thus standing diagonally across the sail.

spritsail: a fore-and-aft sail usually without boom and fitted with brails, which is set by a spreet in place of a gaff.

squaresail: a four-cornered sail extended by a yard slung by the middle.

square-rigged: a vessel rigged mainly with squaresails as opposed to fore-and-aft sails. The square rig lends itself to use in the largest sailing vessels, and has been the rig of the finest fighting sailing fleets the world has seen.

stanchion: a fixed upright support.

standing: applied to a bowsprit, or other spar, which is kept in its place and is not run in or unshipped or reefed; also to rigging, such as shrouds and stays, which is not constantly handled in working a vessel.

starboard: the old *stjornbordi*, or Norse steering side. The right hand looking forward. The Anglo-Saxon *steorabord*.

stay: a strong rope extending from the upper part of a mast in a fore-and-aft direction to hold the mast and prevent it from springing when pitching deep, or from bending when with a weight of sail upon it. A stay in a forward direction is a *forestay*, and those brought to the side abaft the mast are *backstays*. As part of the standing rigging these are generally made of steel wire when possible. Colloquially the term is often applied to the shrouds, or standing rigging supporting the mast laterally.

stay, to: to tack, or bring a vessel's head up to the wind for going about on a new tack.

staysail: a triangular sail hoisted along a stay on which the luff travels attached by hanks or lacing, and by which the luff is rendered rigid, *e.g.* for topmast staysail, fore staysail, etc.

stem, or stempiece: the cutwater or foremost piece of a vessel on which the curves of the bow unite, and which is scarfed into the keel.

step: the place where the mast or other fixture is set up.

stern: the afterpart of the vessel where the quarters are rounded off and converge. It may be *sharp, i.e.* with stern-post similar to the stem and rudder hung outside; or a *counter* stern *q.v.*, or a *square* or *transom*-stern.

stern-post: the opposite to the stem; scarfed into the keel. The gudgeons carrying the rudder are usually bolted into it.

stock: the crossbar secured to the upper end of the shank of an anchor at right angles to the flukes.

strake: one breadth of planking in a vessel taken longitudinally, *e.g.* a wash-strake, added to the gunwale or upper strake to keep off water or spray.

sweep: a long, heavy oar used in a sailing-vessel by one or more men in case of calm.

swig, or swing, or sway up: to pull on to a bight of a rope by jerks when its lower end is fast; or to gain on a rope by jumping a man's weight down, *e.g.* in setting up a lugsail or jib or any other sail which has to be set up very taut along its luff.

T

tabernacle: a strong trunk built on the deck of barge-built vessels, in which the foot of the mast hinges so that it can be lowered aft by the forestay for passing under bridges, etc.

tack: the lower fore-angle of a fore-and-aft sail.

tack, to: to go about, or change course from one board to another, b[illegible] the windward becomes the leeward side, and *vice versâ*.

tackle: a purchase formed by the connection of a fall or rop[illegible] more blocks.

taut: tight.

thrash: to beat to windward.

throat: the widened and hollowed end of a gaff ne[illegible] end to the peak. Hence also the upper fore co[illegible]

thwarts, athwarts: seats or benches athwart a boat.

tiller: the piece of wood or metal which is fitted into the rudder head by means of which the rudder is worked.

top: the platform on the head of the lower mast upon which the heel of the topmast stands, and to which the topmast shrouds are spread.

top, to: to raise one end of a boom or yard.

topgallant: applied to the mast and sail, which in square-rigged vessels come above the topmast and topsails.

topmast: an upper mast raised at the head of the lower mast to give greater height than would be possible with a single spar.

topsail: the sail set on the topmast. It may be a square topsail set on square yards, as in a topsail schooner; or a gaff topsail extended on the mainsail gaff as in a cutter—which may further be a jib-header, jack-yarder, etc.; or a jib-topsail, set on the topmast stay.

topside: the portion of the side of a vessel which comes above the sheer-strake.

trabacola: a trading coaster of the Adriatic.

trammel: a set net used by fishermen, with stone anchors at the ends to keep it extended. Fish coming against it get caught by the gills.

tramp: a slang expression for a cargo steamer not engaged upon any regular run, but taking freights as they offer.

transom: a thwartship bulkhead. Many boats are built with a transom-stern, which consists of a bulkhead placed across the stern-post, the quarters being ended off abruptly, and thus carrying the body shape of the boat further aft above the waterline than if they were rounded into the stern-post.

trawl: a strong bag net, dragged along the bottom by a vessel propelled by sails or steam. Its mouth is either extended by a strong beam or by an 'otter,' which has been latterly perfected by steam trawlers, which can keep up a considerable and undeviating speed.

trinchetto: French, *arbre le trinquet*; Arab. *trinkeitte*. The old foremast of Mediterranean lateen-rigged craft.

tumble-home: the reverse of flare—when the section shows a curve inward of the vessel's side above the point of extreme breadth.

U

under way: when a vessel is moving, and has gathered way.

V

vang: a guy or rope leading from the end of a gaff to the rail by which to steady the gaff or prevent it sagging away to leeward.

velocera: an Italian coaster.

W

waist: the place of lowest freeboard, generally amidships.

wash-strake: an upper strake, often attached by stud-pins to the gunwales of boats to keep out spray and water.

waterway: a channel along the side made of deck planks to carry off water. In half-decked boats they reduce the danger from excessive heeling.

wear: in contradistinction to tacking or staying; to put up the helm so as to turn the vessel on to the other tack by sending her head round before the wind.

weather: at sea the state of the atmosphere with regard to the degree of wind. Hence the portion of the compass from which the wind comes. The weather side—the side towards the wind; weather helm—when the vessel is inclined to run up to the wind.

well: a trunk or open space fitted into a vessel; sometimes with perforated bottom in fishing-boats to keep fish alive.

wherry: a sharp, light, shallow boat, generally stem and stern alike, with fine entry and run, and usually without the customary gunwale piece. The French *houari*; old English *ouare*.

whisker: iron spars extending each side from the stem for spreading the guys of the bowsprit.

windward: towards the direction of the wind.

X

xebec: an old three-masted Mediterranean vessel of sharp floor and long overhanging ends, rigged with lateen-sails, and sometimes with squaresails on the foremast.

Y

yaegt: a Norwegian coast vessel.

yard: a long spar slung in the neighbourhood of the centre so that it crosses the mast. It may be square, *i.e.* at right angles to the mast, and slung at the centre; or lateen or lug, when it stands at an angle, and is slung one-third to one-quarter of its length from the fore-end.

yawl: *qu.* the ancient γαῦλος. The Scandinavian *yol*, properly a light vessel, stem and stern alike, and clinker built like the Sondmöersk boats of Norway. The Yarmouth yawls were true yawls, and, like many other yawl-built boats of England, were probably of Norse design originally. The term is now applied to dandy-rigged vessels, and many cutter-rigged vessels become yawls by having the main boom cut down and a small jigger, or mizen, mast and sail placed on the counter.

yoke: a transverse board or metal bar, a substitute for the tiller, which crosses the rudder head. Two lines extend from its opposite ends to the steersman. In some Norse boats, where the yoke has only one arm, a wooden bar is jointed at its outer end, and is worked by the helmsman.

Z

zulu: a class of Scotch fishing-lugger with straight stem and raking stern-post.

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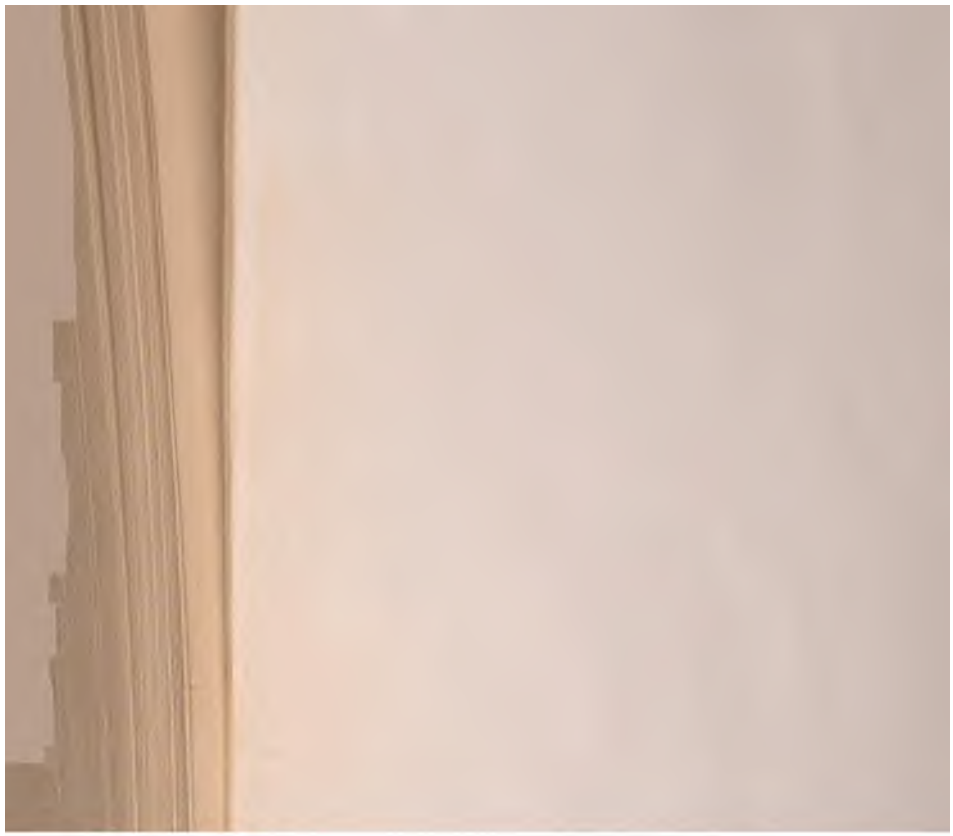

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